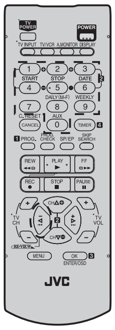
JVC

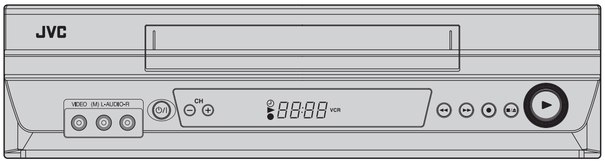
SCHEMATIC DIAGRAMS

VIDEO CASSETTE RECORDER

HR-J4020UA, HR-J4020UB, HR-J7020UA, HR-J7020UM

CD-ROM No.SML200407


TV POWER
POWER
TV INPUT
TV/VCR
A.MONITOR
DISPLAY
START
STOP
DATE
DAILY(M-F)
WEEKLY
CANCEL
AUX
TIMER
PROG.
CHECK
SP/EP
SKIP SEARCH
REW
PLAY
FF
REC
STOP
PAUSE
TV CH
TV VOL
MENU
OK
ENTER/OSD
JVC


JVC
VIDEO
(M) L-AUDIO-R
CH
VCR

HR-J4020UA, HR-J4020UB,
HR-J7020UA, HR-J7020UM [V17C1, V17D0]

VHS N-PAL NTSC (UA model) VHS (UB, UM model)

SQPB NTSC (UA model)

SQPB (UB, UM model)

Hi-Fi (HR-J7020UA, HR-J7020UM)

For disassembling and assembling of MECHANISM ASSEMBLY, refer to the SERVICE MANUAL No.86700(MECHANISM ASSEMBLY).

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No.YD007SCH
2004/7

CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

Safety precautions
The Components indentified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.

1. Units of components on the schematic diagram

Unless otherwise specified.

1) All resistance values are in ohm. 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ(1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in µF, (P: PF).
3) All inductance values are in µH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

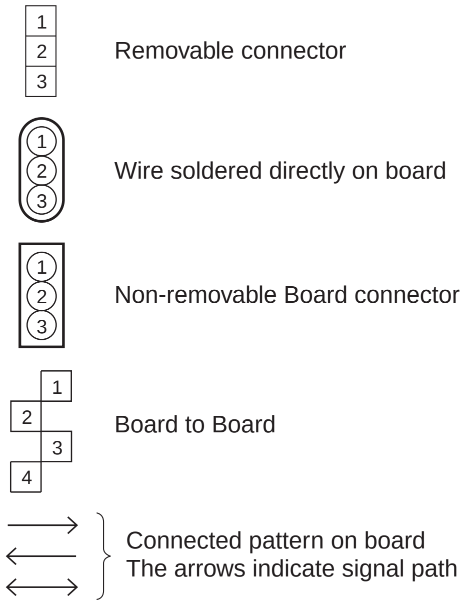
Note: The Parts Number, value and rated voltage etc. in the Schematic Diagram are for references only. When replacing the parts, refer to the Parts List.

2. Indications of control voltage

AUX : Active at high.

$\overline{\text{AUX}}$ or AUX(L) : Active at low.

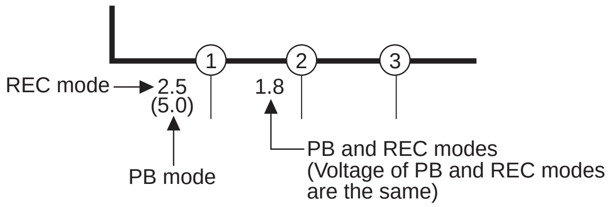
3. Interpreting Connector indications


1
2
3
Removable connector
1
2
3
Wire soldered directly on board
1
2
3
Non-removable Board connector
1
2
3
4
Board to Board
Connected pattern on board
The arrows indicate signal path

Note: For the destination of each signal and further line connections that are cut off from the diagram, refer to "BOARD INTERCONNECTIONS"

4. Voltage measurement

1) Regulator (DC/DC CONV) circuits
   REC : Colour bar signal.
   PB : Alignment tape (Colour bar).
   — : Unmeasurable or unnecessary to measure.
2) Indication on schematic diagram
   Voltage indications for REC and PB mode on the schematic diagram are as shown below.

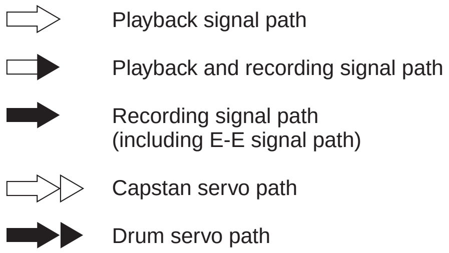

1
2
3
REC mode
2.5
(5.0)
1.8
PB mode
PB and REC modes
(Voltage of PB and REC modes are the same)

Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

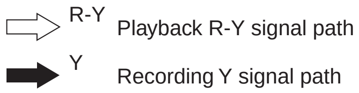
5. Signal path Symbols

The arrows indicate the signal path as follows.

NOTE : The arrow is DVC unique object.

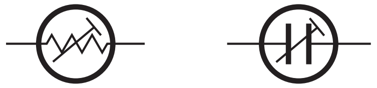

Playback signal path
Playback and recording signal path
Recording signal path
(including E-E signal path)
Capstan servo path
Drum servo path

(Example)


R-Y
Playback R-Y signal path
Y
Recording Y signal path

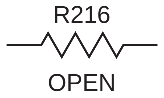
6. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



7. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



CIRCUIT BOARD NOTES

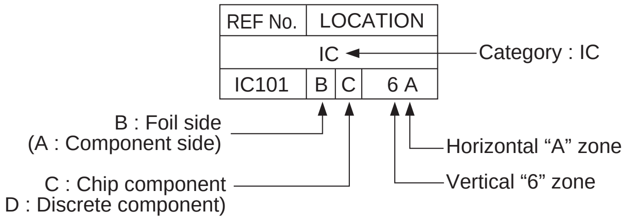
1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

rts location are indicated by guide scale on the circuit board.

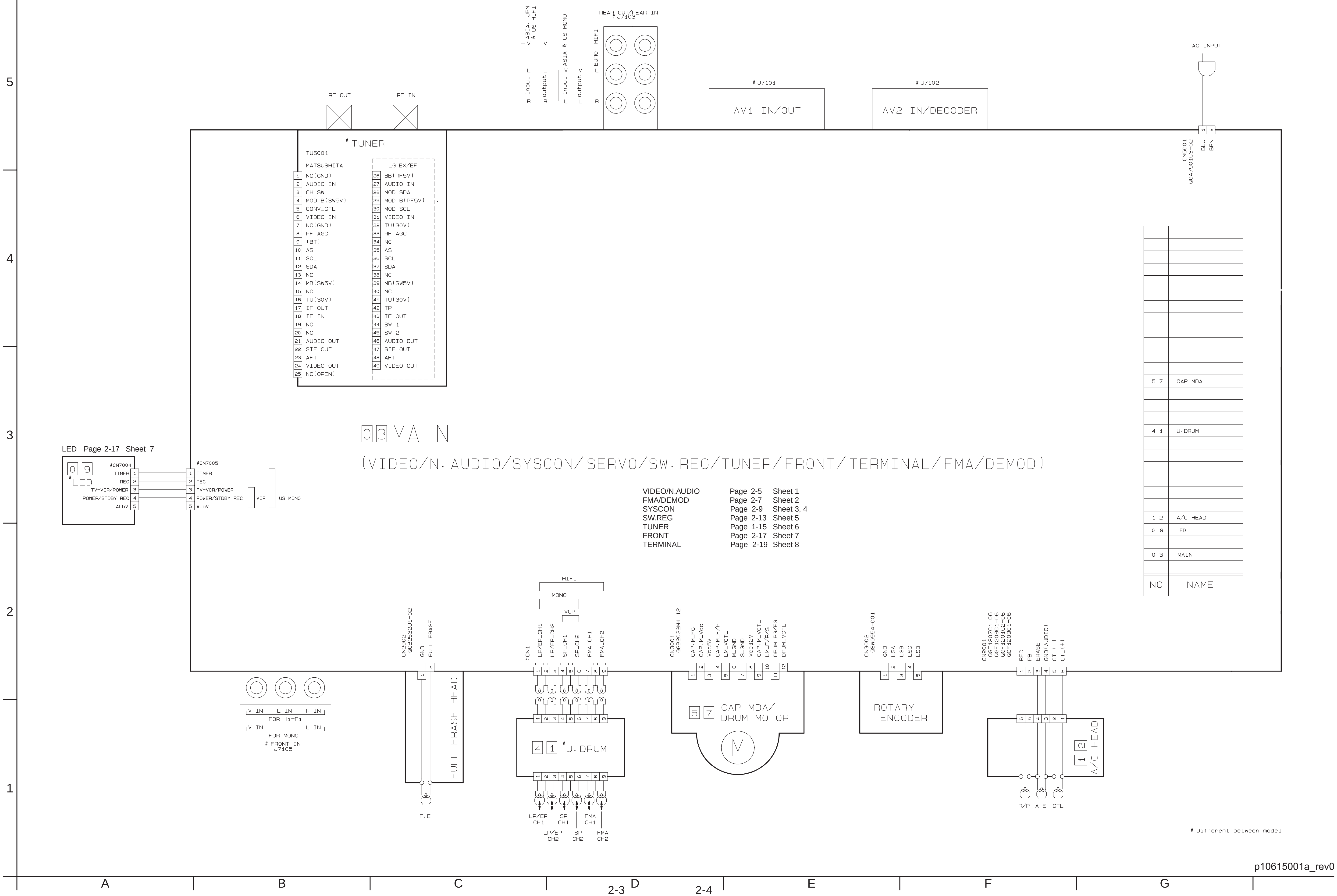
2. Parts location guides

Parts location are indicated by guide scale on the circuit board.


REF No.
LOCATION
IC
Category : IC
IC101
B
C
6 A
B : Foil side
(A : Component side)
Horizontal "A" zone
C : Chip component
D : Discrete component)
Vertical "6" zone

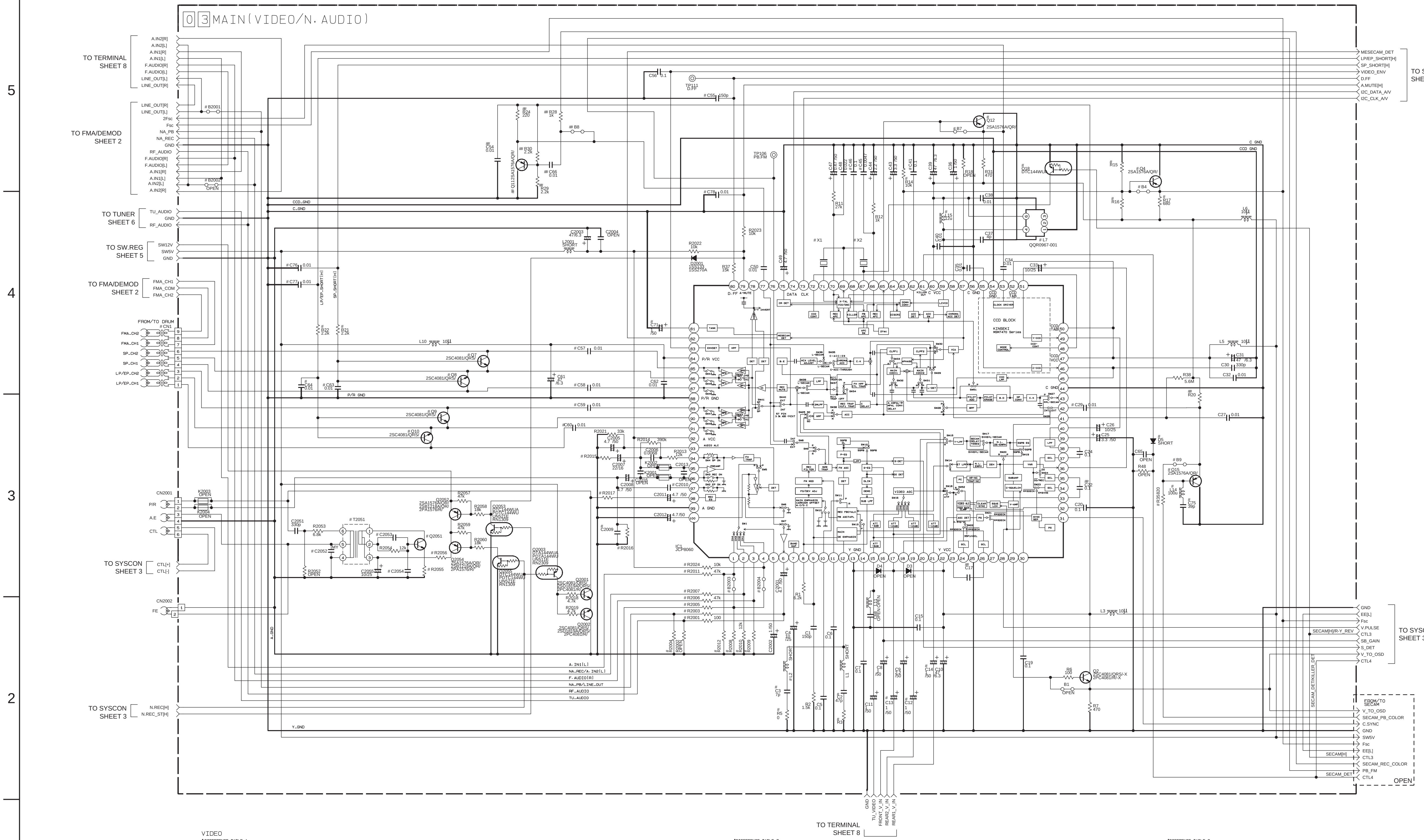
Note: For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

■ BOARD INTERCONNECTIONS


RF OUT
RF IN
REAR OUT/REAR IN
# J7103
# J7101
AV1 IN/OUT
# J7102
AV2 IN/DECODER
AC INPUT
CN5001
QGA7901C3-02
BLU
BRN
# TUNER
TU6001
MATSUSHITA
LG EX/EF
1 NC(GND)
2 AUDIO IN
3 CH SW
4 MOD B(SW5V)
5 CONV_CTL
6 VIDEO IN
7 NC(GND)
8 RF AGC
9 (BT)
10 AS
11 SCL
12 SDA
13 NC
14 MB(SW5V)
15 NC
16 TU(30V)
17 IF OUT
18 IF IN
19 NC
20 NC
21 AUDIO OUT
22 SIF OUT
23 AFT
24 VIDEO OUT
25 NC(OPEN)
26 BB(RF5V)
27 AUDIO IN
28 MOD SDA
29 MOD B(RF5V)
30 MOD SCL
31 VIDEO IN
32 TU(30V)
33 RF AGC
34 NC
35 AS
36 SCL
37 SDA
38 NC
39 MB(SW5V)
40 NC
41 TU(30V)
42 TP
43 IF OUT
44 SW 1
45 SW 2
46 AUDIO OUT
47 SIF OUT
48 AFT
49 VIDEO OUT
03 MAIN
(VIDEO/N.AUDIO/SYSCON/SERVO/SW.REG/TUNER/FRONT/TERMINAL/FMA/DEMOD)
LED Page 2-17 Sheet 7
09 # LED
#CN7004
#CN7005
TIMER
REC
TV-VCR/POWER
POWER/STDBY-REC
AL5V
VCP
US MONO
57 CAP MDA
41 U.DRUM
12 A/C HEAD
09 LED
03 MAIN
NO
NAME
V IN L IN R IN
FOR Hi-Fi
V IN L IN
FOR MONO
# FRONT IN
J7105
CN2002
QGB2532J1-02
GND
FULL ERASE
FULL ERASE HEAD
F.E
HIFI
MONO
VCP
# CN1
LP/EP_CH1
LP/EP_CH2
SP_CH1
SP_CH2
FMA_CH1
FMA_CH2
41 # U.DRUM
LP/EP CH1
SP CH1
FMA CH1
LP/EP CH2
SP CH2
FMA CH2
CN3001
QGB2032M4-12
CAP.M_FG
CAP.M_Vcc
Vcc5V
CAP.M_F/R
LM_VCTL
M_GND
S_GND
Vcc12V
CAP.M_VCTL
LM_F/R/S
DRUM_PG/FG
DRUM_VCTL
57 CAP MDA/ DRUM MOTOR
M
CN3002
QSW0954-001
GND
LSA
LSB
LSC
LSD
ROTARY ENCODER
CN2001
QGF1207C1-06
QGF1208C1-06
QGF1201C2-06
QGF1209C1-06
REC
PB
ERASE
GND(AUDIO)
CTL(-)
CTL(+)
12 A/C HEAD
R/P
A.E
CTL
# Different between model
A
B
C
D
E
F
G
1
2
3
4
5

VIDEO/N.AUDIO	Page 2-5	Sheet 1
FMA/DEMOD	Page 2-7	Sheet 2
SYSCON	Page 2-9	Sheet 3, 4
SW.REG	Page 2-13	Sheet 5
TUNER	Page 1-15	Sheet 6
FRONT	Page 2-17	Sheet 7
TERMINAL	Page 2-19	Sheet 8

■ MAIN(VIDEO/N.AUDIO) SCHEMATIC DIAGRAM


03 MAIN(VIDEO/N.AUDIO)
TO TERMINAL SHEET 8
A.IN2[R]
A.IN2[L]
A.IN1[R]
A.IN1[L]
F.AUDIO[R]
F.AUDIO[L]
LINE_OUT[L]
LINE_OUT[R]
TO FMA/DEMOD SHEET 2
LINE_OUT[R]
LINE_OUT[L]
2Fsc
Fsc
NA_PB
NA_REC
GND
RF_AUDIO
F.AUDIO[R]
F.AUDIO[L]
A.IN1[R]
A.IN1[L]
A.IN2[L]
A.IN2[R]
TO TUNER SHEET 6
TU_AUDIO
GND
RF_AUDIO
TO SW.REG SHEET 5
SW12V
SW5V
GND
TO FMA/DEMOD SHEET 2
FMA_CH1
FMA_COM
FMA_CH2
FROM/TO DRUM
CN1
FMA_CH2
FMA_CH1
SP_CH2
SP_CH1
LP/EP_CH2
LP/EP_CH1
CN2001
P/R
A.E
CTL
TO SYSCON SHEET 3
CTL[+]
CTL[-]
CN2002
FE
TO SYSCON SHEET 3
N.REC[H]
N.REC_ST[H]
Y_GND
TO SYSCON SHEET 3
MESECAM_DET
LP/EP_SHORT[H]
SP_SHORT[H]
VIDEO_ENV
D.FF
A.MUTE[H]
I2C_DATA_A/V
I2C_CLK_A/V
TO SYSCON SHEET 3
GND
EE[L]
Fsc
V.PULSE
CTL3
SB_GAIN
S_DET
V_TO_OSD
CTL4
FROM/TO SECAM
V_TO_OSD
SECAM_PB_COLOR
C.SYNC
GND
SW5V
Fsc
EE[L]
CTL3
SECAM_REC_COLOR
PB_FM
CTL4
OPEN
IC1 JCP8060
CCD BLOCK
GND
TU_VIDEO
FRONT_V_IN
REAR2_V_IN
REAR1_V_IN
TO TERMINAL SHEET 8

VIDEO

#DIFFERENCE TABLE 1

		IC1	X1	B4	B7	Q4	Q12	Q18	R3	R14	R15, R16, R17	R28	R31	C2	C41	C45	C46	C55	B8, B9, R5, R35, C3, C29, C75, L2, L14	D5
NTSC		NVA	×	○	○	×	×	×	8.2k	×	×	×	×	33p	0.1	0.0047	0.033	×	×	×
PAL-M		LSA	QAX0809	×	○	○	×	○	8.2k	×	○	×	×	33p	0.1	0.068	0.01	×	×	○
PAL-N	HIFI	LSA	QAX0808	×	○	○	×	×	8.2k	×	○	×	×	47p	0.22	0.033	0.033	×	×	×
	MONO	LSA	QAX0808	×	○	○	×	×	8.2k	×	○	×	×	47p	0.22	0.033	0.01	×	×	×
PAL/ARC		MSA	QAX0740/796	○	×	×	○	×	4.7k	○	×	×	○	47p	0.1	0.0047	0.01	○	×	×
with SECAM		MSA	QAX0740/796	○	×	×	○	×	8.2k	○	×	○	○	33p	0.1	0.0047	0.01	○	○	○

#DIFFERENCE TABLE 2

INPUT	C12	C13	C14
FRONT	×	○	×
REAR1	×	×	○
FRONT/REAR1	×	○	○
REAR2	○	×	×
FRONT/REAR1/REAR2	○	○	○

#DIFFERENCE TABLE 3

3.58NTSC	X2
YES	○
NO	×

#DIFFERENCE TABLE 4

MESECAM	C71
YES	○
NO	×

#DIFFERENCE TABLE 5

CE	L7	L15
YES	○	×
NO	×	○

#DIFFERENCE TABLE 6

HEAD TYPE		Q7, Q8	Q9, Q10	R21	R22	C57, C58	C59, C60	C63, C64	C76, C77	CN1
4 HEAD HIFI	NTSC/PAL-M	×	×	×	×	0.1	0.1	×	×	9 PIN (1-9)
	PAL/PAL-N	○	○	○	○	0.01	0.01	○	○	9 PIN (1-9)
4 HEAD MONO	NTSC/PAL-M	×	×	×	×	0.1	0.1	×	×	6 PIN (1-6)
	PAL/PAL-N	×	×	×	×	0.1	0.1	×	×	6 PIN (1-6)
2 HEAD		×	×	×	×	0.1	0.1	×	×	6 PIN (1-6)

#DIFFERENCE TABLE 7

AUDIO			FRONT IN		REAR IN		NA REC		LINE OUT	NA PB/LINE OUT		RF AUDIO	TU AUDIO				REAR2 IN	HIFI/MONO
			R2006	R2009	R2011	R2012	R2007	R2010	B2001	R2003	R2004	R2001	B2003	B2004	R2005	R2008	B2002	R2024
HIFI	EURO		×	×	×	×	18k	12k	×	100	×	×	○	×	15k	10k	×	○
	ARC/KOREA		×	×	×	×	18k	12k	×	100	×	×	×	×	×	×	×	○
	UM/UA/UB		×	×	×	×	12k	12k	×	100	×	×	×	×	×	×	×	○
	JAPAN		×	×	×	×	12k	12k	×	0Ω	×	×	×	×	×	×	×	○
MONO	PAL	WITH REAR IN	×	×	47k	5.6k	×	×	○	680	2.7k	100	×	○	15k	10k	×	×
		FRONT & REAR	47k	5.6k	47k	5.6k	×	×	○	680	2.7k	100	×	○	15k	10k	×	×
	VCP	WITH REAR IN	×	×	47k	5.6k	×	×	○	680	2.7k	100	×	×	×	×	×	×
	UA/UB	FRONT & REAR	47k	6.8k	47k	6.8k	×	×	○	680	2.7k	100	×	○	33k	47k	×	×

#DIFFERENCE TABLE 9

	PB EQ		REC EQ		PB GAIN
	R2016	C2009	R2017	C2010	R2015
PAL/MULTI	39k	0.0012	18k	0.0015	300
UM/UA/UB/JAPAN	33k	0.0015	22k	0.001	330

#DIFERENCE TABLE 8

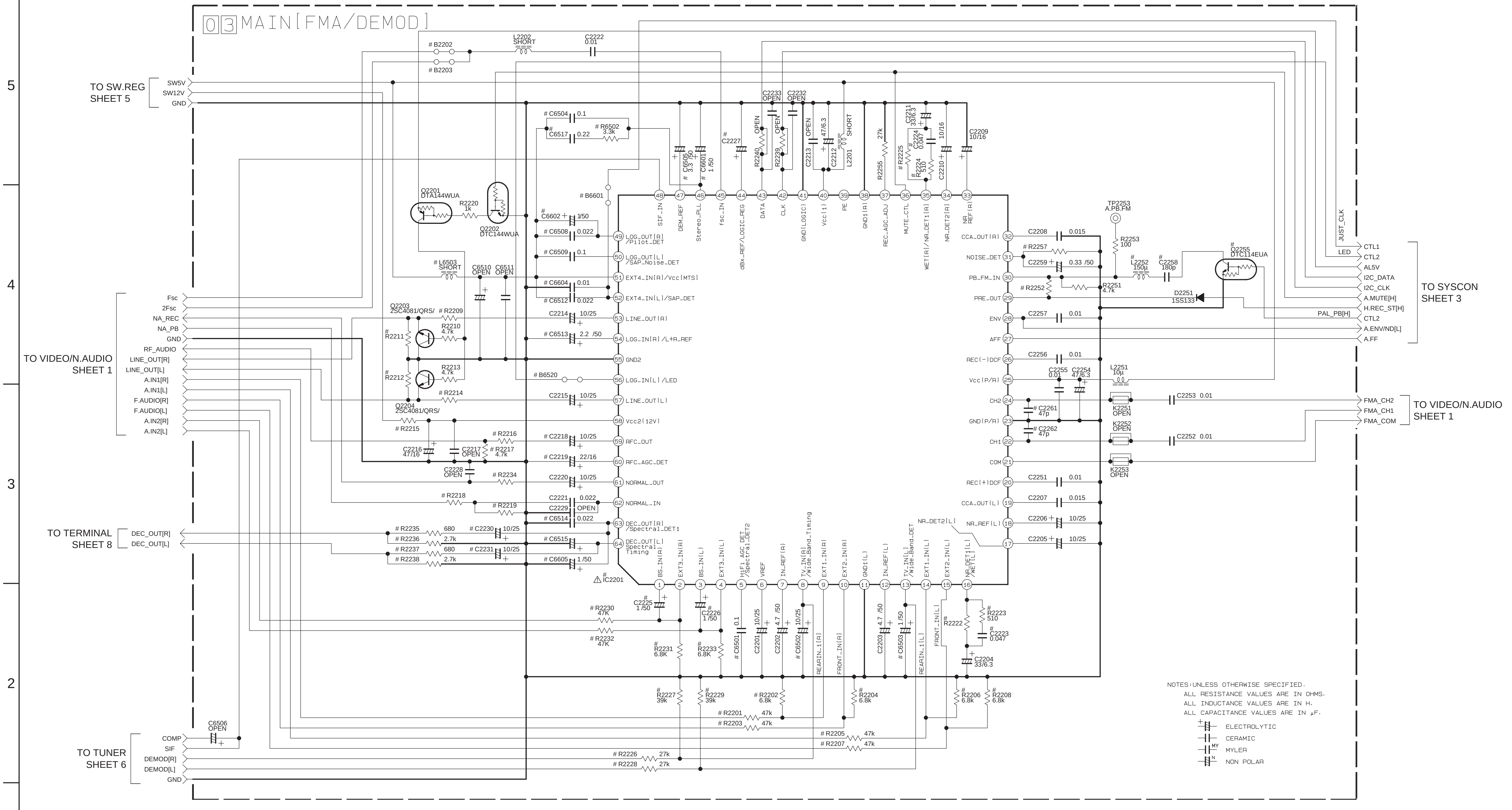
	T2051	C2052	C2053	C2054	R2055	R2056	Q2051
PAL	QQR0002-001 QQR1309-001	0.082	0.0047	0.022	3.3Ω	82Ω	2SC4081/QRS/ 2SD1819A/QRS/ 2PC4081/R/
UM/UA/UB	QQR0002-001 QQR1309-001	0.082	0.0047	0.022	3.3Ω	82Ω	2SC4081/QRS/ 2SD1819A/QRS/ 2PC4081/R/
JAPAN	QQR1197-001 QQR1279-001	0.047	0.0033	0.0068	4.7Ω	56Ω	2SD1820A/RS/ 2SC4097/QR/

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

$\dashv\vdash^{+}$	ELECTROLYTIC
$\dashv\vdash$	CERAMIC
$\dashv\vdash^{MY}$	MYLER
$\dashv\vdash^{N}$	NON POLAR

p10617001a_rev1

■ MAIN(FMA/DEMOD) SCHEMATIC DIAGRAM [HiFi MODEL ONLY]


03 MAIN[FMA/DEMOD]
TO SW.REG SHEET 5
SW5V
SW12V
GND
TO VIDEO/N.AUDIO SHEET 1
Fsc
2Fsc
NA_REC
NA_PB
GND
RF_AUDIO
LINE_OUT[R]
LINE_OUT[L]
A.IN1[R]
A.IN1[L]
F.AUDIO[R]
F.AUDIO[L]
A.IN2[R]
A.IN2[L]
TO TERMINAL SHEET 8
DEC_OUT[R]
DEC_OUT[L]
TO TUNER SHEET 6
COMP
SIF
DEMOD[R]
DEMOD[L]
GND
TO SYSCON SHEET 3
JUST_CLK
LED
CTL1
CTL2
AL5V
I2C_DATA
I2C_CLK
A.MUTE[H]
H.REC_ST[H]
PAL_PB[H]
CTL2
A.ENV/ND[L]
A.FF
TO VIDEO/N.AUDIO SHEET 1
FMA_CH2
FMA_CH1
FMA_COM
IC2201
Q2201 DTA144WUA
Q2202 DTC144WUA
Q2203 2SC4081/QRS/
Q2204 2SC4081/QRS/
Q2255 DTC114EUA
D2251 1SS133
TP2253 A.PB.FM
L2202 SHORT
C2222 0.01
# B2202
# B2203
# L6503 SHORT
C6510 OPEN
C6511 OPEN
# B6601
# B6520
K2251 OPEN
K2252 OPEN
K2253 OPEN
L2251 10µ
C2253 0.01
C2252 0.01
SIF_IN
DEM_REF
Stereo_PLL
fsc_IN
dBx_REF/LOGIC_REG
DATA
CLK
GND(LOGIC)
Vcc(1)
PE
GND1(R)
REC_AGC_ADJ
MUTE_CTL
WET(R)/NA_DET1(R)
NA_DET2(R)
NR_REF(R)
CCA_OUT(R)
NOISE_DET
PB_FM_IN
PRE_OUT
ENV
AFF
REC(-)DCF
Vcc(P/R)
CH2
GND(P/R)
CH1
COM
REC(+)DCF
CCA_OUT(L)
NR_REF(L)
NR_DET2(L)
LOG_OUT(R) /Pilot_DET
LOG_OUT(L) /SAP_Noise_DET
EXT4_IN(R)/Vcc(MTS)
EXT4_IN(L)/SAP_DET
LINE_OUT(R)
LOG_IN(R)/L+R_REF
GND2
LOG_IN(L)/LED
LINE_OUT(L)
Vcc2(12V)
RFC_OUT
RFC_AGC_DET
NORMAL_OUT
NORMAL_IN
DEC_OUT(R) /Spectral_DET1
DEC_OUT(L) Spectral Timing
BS_IN(R)
EXT3_IN(R)
BS_IN(L)
EXT3_IN(L)
HiFi AGC_DET /Spectral_DET2
VREF
IN_REF(R)
TV_IN(R) /Wide_Band_Timing
EXT1_IN(R)
EXT2_IN(R)
GND1(L)
IN_REF(L)
TV_IN(L) /Wide_Band_DET
EXT1_IN(L)
EXT2_IN(L)
NR_DET1(L) /WET(L)
REARIN_1(R)
FRONT_IN(R)
FRONT_IN(L)
REARIN_1(L)
NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR
A
B
C
D
E
F
G
1
2
3
4
5

#DIFFERENCE TABLE 1

INPUT	FRONT INPUT	REAR INPUT 1	REAR INPUT 2
	R2203 R2204 R2207 R2208	R2201 R2202 R2205 R2206	R2230 R2231 R2232 R2233
YES	○	○	○
NO	×	×	×

#DIFFERENCE TABLE 2

RF OUT		R2216	R2217 C2218 C2219
YES	UM/UA/UB	1k	○
	OTHERS	1.2k	○
NO		×	×

#DIFFERENCE TABLE 3

CH+	C2225 C2226 C2230 C2231 R2235–R2238
YES	○
NO	×

#DIFFERENCE TABLE 4

SECAM/MESECAM	Q2255 L2252 C2258
EU/EK/ARC	○
OTHERS	×

#DIFFERENCE TABLE 5

FMA INTERFERENCE C/M	C2261 C2262
UA/UB	○
OTHERS	×

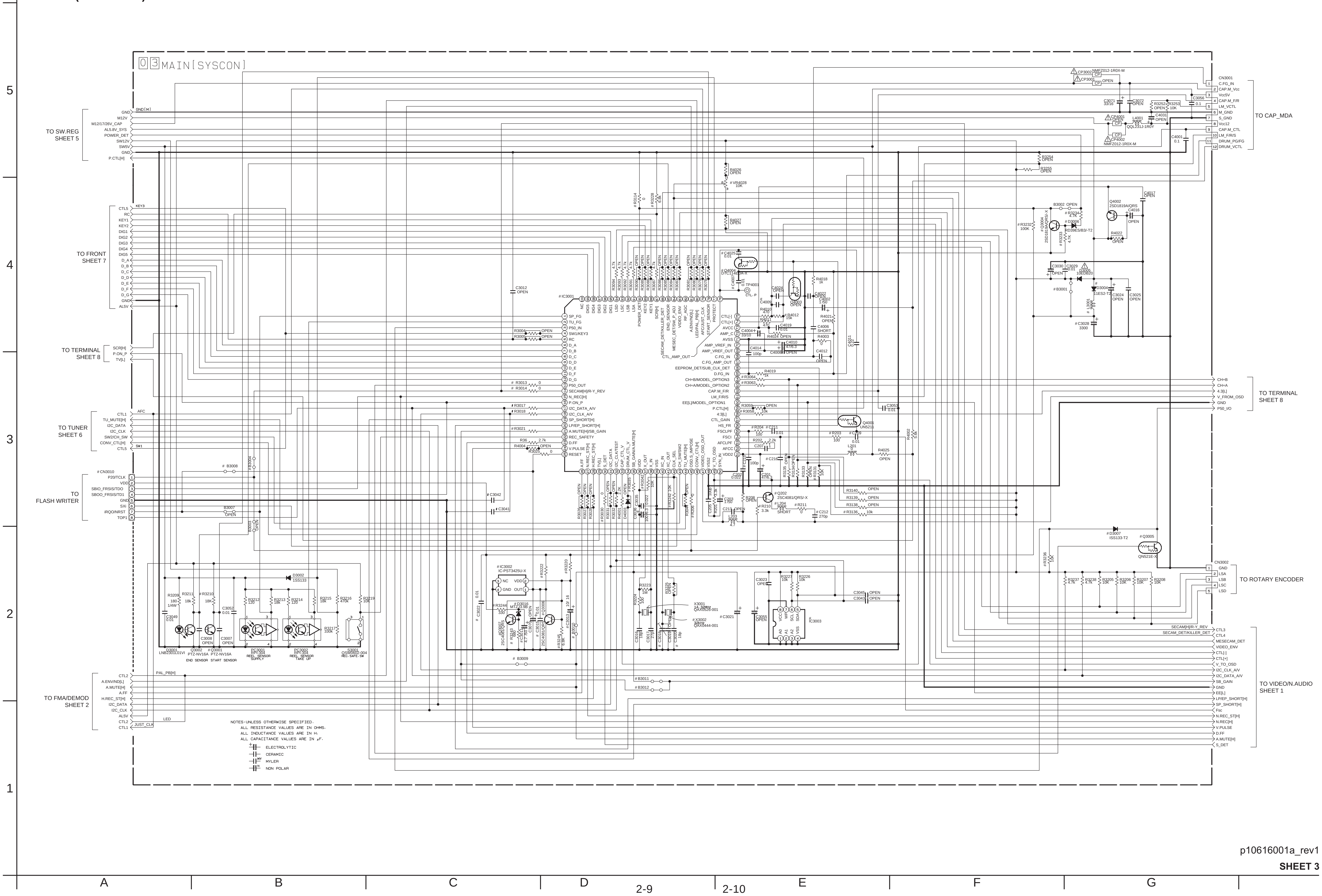
#DIFFERENCE TABLE 6

	DEMOD							NOISE REDUCTION		fsc	2fsc	NA_PB		NA_REC	LINE_OUT		PBFM_IN	NOISE_DET	Vcc2(12V)
	IC2201	C6501 C6505 L6503 B6520	R6502 C6517 C6502–C6504 C6508 C6509 C6512–C6514	B6601 C6601 C6602 C6604 C6605	C6515	C2227	R2226–R2229	R2223 R2224 C2223 C2224	R2222 R2225	B2202	B2203	R2218	R2219	R2234	R2209 R2214	R2211 R2212	R2252	R2257	R2215
EUROPE/ASIA	AN3651FBP	×	×	×	OPEN	10/25	○	○	4.7k	×	○	3.3k	1.2k	100	680	2.7k	220	OPEN	180
UM/UA/UB	AN3663FBP	○	○	×	3.3/50	4.7/50	×	×	0Ω	○	×	3.9k	1k	0Ω	100	3.3k	3.3k	680k	220
JAPAN	AN3672NFBP	○	×	○	1/50	10/25	×	×	0Ω	○	×	3.9k	1k	0Ω	100	3.3k	3.3k	680k	220

p20415001a_rev0

SHEET 2

■ MAIN(SYSCON) SCHEMATIC DIAGRAM


03 MAIN[SYSCON]
TO SW.REG SHEET 5
GND
M12V
M12/17/26V_CAP
AL5.8V_SYS
POWER_DET
SW12V
SW5V
GND
P.CTL[H]
TO FRONT SHEET 7
CTL5
RC
KEY1
KEY2
DIG1
DIG2
DIG3
DIG4
DIG5
D_A
D_B
D_C
D_D
D_E
D_F
D_G
GND
AL5V
TO TERMINAL SHEET 8
SCR[H]
P.ON_P
TV[L]
TO TUNER SHEET 6
CTL1
TU_MUTE[H]
I2C_DATA
I2C_CLK
SW2/CH_SW
CONV_CTL[H]
CTL5
TO FLASH WRITER
CN3010
P20/TCLK
VDD
SBIO_FRSIS/TDO
SBOO_FRSIS/TD1
GND
SXI
IRQ0/NRST
TOP1
TO FMA/DEMOD SHEET 2
CTL2
A.ENV/ND[L]
A.MUTE[H]
A.FF
H.REC_ST[H]
I2C_DATA
I2C_CLK
AL5V
CTL2
CTL1
IC3001
IC3002 IC-PST3425U-X
IC3003
X3001 CSTCR6M00G15L99-R0
X3002 32kHz QAX0444-001
Q3001 LNB2301L01VI
Q3002 PTZ-NV16A
Q3001 PTZ-NV16A
END SENSOR
START SENSOR
PC3001 RPI-304 REEL SENSOR SUPPLY
PC3002 RPI-304 REEL SENSOR TAKE UP
S3001 QSW0622-004 REC. SAFE. SW
D3002 1SS133
CN3001
C.FG_IN
CAP.M_Vcc
Vcc5V
CAP.M_F/R
LM_VCTL
M_GND
S_GND
Vcc12
CAP.M_CTL
LM_F/R/S
DRUM_PG/FG
DRUM_VCTL
TO CAP_MDA
TO TERMINAL SHEET 8
CH+B
CH+A
4:3[L]
V_FROM_OSD
GND
P50_I/O
CN3002
TO ROTARY ENCODER
GND
LSA
LSB
LSC
LSD
TO VIDEO/N.AUDIO SHEET 1
SECAM[H]/R-Y_REV
SECAM_DET/KILLER_DET
CTL3
CTL4
MESECAM_DET
VIDEO_ENV
CTL[-]
CTL[+]
V_TO_OSD
I2C_CLK_A/V
I2C_DATA_A/V
SB_GAIN
GND
EE[L]
Fsc
LP/EP_SHORT[H]
SP_SHORT[H]
N.REC_ST[H]
N.REC[H]
V.PULSE
D.FF
A.MUTE[H]
S_DET
Q4001 UN5211
Q4002 2SD1819A/QRS
Q3005 QN521E-X
Q202 2SC4081/QRS/-X
D3007 1SS133-T2
A
B
C
D
E
F
G
1
2
3
4
5

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.

ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

p10616001a_rev1

SHEET 3

#DIFFERENCE TABLE 1

		HR-V510EX	HR-V515EF	HR-V210EX	HR-V210AG HR-V211AS HR-V210AA HR-V215ER HR-V216ER	HR-V217AG	HR-V410AG HR-V411AS HR-V415ER	HR-P110AG HR-P111AG HR-P211ER	HR-J7020UM	HR-J7020UA	HR-J4020UA	HR-J4020UB	HR-A20K
SYSCON IC	IC3001	A	B	A	C	C	C	C	D	D	D	D	E
EEPROM	IC3003	8K	16K	8K	4K	4K	4K	4K	4K	4K	4K	4K	8K
START SENSOR	Q3001 R3210	○	○	○	○	○	○	○	×	×	×	×	×
SECAM	R3014	×	○	×	×	○	×	×	×	×	×	×	×
SECAM/MESECAM SUPERIMPOSE	R206 R211 L204 C212 Q202 R210	○	○	○	○	○	○	○	×	×	×	×	×
OSD	R203 C209 R204 C211	○	○	○	○	○	○	○	×	○	○	○	×
	C216 C215	○	○	○	○	○	○	○	SHORT	○	○	○	SHORT
WIDE SCREEN	R3058	○	○	○	×	×	×	×	×	×	×	×	×
P50	D3007 Q3005 R3013 R3236	○	○	○	×	×	×	×	×	×	×	×	×
DECODER	R3064 R3228 R3063	×	○	×	×	×	×	×	×	×	×	×	×
SQPB	R3030	○	○	×	×	×	○	×	○	○	○	○	○
BACK-UP	D3004 C3028	○	○	○	○	○	○	×	×	×	×	×	○
	B3001 C3029	×	×	×	×	×	×	○	○	○	○	○	×
RESET CIRCUIT	Q3006 Q3007 D3016	×	×	×	×	×	×	○	○	○	○	○	×
	C3011 R3243-R3245	×	×	×	×	×	×	○	○	○	○	○	×
	R3220	6.8K	6.8K	6.8K	6.8K	6.8K	6.8K	5.6K	5.6K	5.6K	5.6K	5.6K	6.8K
	R3222	4.7K	4.7K	4.7K	4.7K	4.7K	4.7K	470	470	470	470	470	4.7K
RESET IC	IC3002 C3013	○	○	○	○	○	○	×	×	×	×	×	○
	C3015 C3022	○	○	○	○	○	○	×	×	×	×	×	○
POWER DETECT	D3006 Q3004	○	○	○	○	○	○	×	×	×	×	×	○
	R3232-R3234	○	○	○	○	○	○	×	×	×	×	×	○
	R3114	×	×	×	×	×	×	○	○	○	○	○	×
SUB CLOCK	X3002 C3020	○	○	○	○	○	○	×	×	×	×	×	○
	C3019	×	×	×	×	×	×	×	×	×	×	×	○
	C3018	○	○	○	○	○	○	×	×	×	×	×	×
CLK SELECT	R3042	×	○	×	×	×	×	×	×	×	×	×	×
	R3242	○	×	○	○	○	○	○	○	○	○	○	○
EEPROM-LESS MODEL	VR4028	×	×	×	×	×	×	×	×	×	×	×	×
FF/REW SPEED	Q4004 C4025	○	○	○	○	○	○	○	×	×	×	×	×
	C4007	×	×	×	×	×	×	×	○	○	○	○	○
	C4009	150p	150p	150p	150p	150p	150p	150p	0.001u	0.001u	0.001u	0.001u	0.001u
MODEL OPTION GND	R3135	×	×	×	×	×	×	×	×	×	×	×	×
	R3134	×	×	×	×	×	×	×	×	×	×	×	×
	R3133	×	×	×	×	×	×	×	×	×	×	×	×
MODEL OPTION AL5V	R3140	×	×	×	×	×	×	×	×	×	×	×	×
	R3139	×	×	×	×	×	×	×	×	×	×	×	×
	R3138	×	×	×	×	×	×	×	×	×	×	×	×
EEPROM MODEL / SUB CLOCK DETECT	R3131	×	×	×	×	×	×	○	×	×	×	×	×
	R3136	×	×	×	○	○	○	×	×	×	×	×	×
SB GAIN AND A.MUTE SWAP	B3010 B3012	×	○	×	×	×	×	×	×	×	×	×	×
	B3009 B3011	○	×	○	○	○	○	○	○	○	○	○	○
	R3021	0	1K	0	0	0	0	0	0	0	0	0	0
	R3035	4.7K	0	4.7K	4.7K	4.7K	4.7K	4.7K	4.7K	4.7K	4.7K	4.7K	4.7K
	C3021	100/15V	OPEN	100/15V	100/15V	100/15V	100/15V	100/15V	100/15V	100/15V	100/15V	100/15V	100/15V
SHORT TEST COUNTER MEASURE	L3001	10u	10u	10u	10u	10u	10u	10u	SHORT	SHORT	SHORT	SHORT	10u
LINE NOISE C/M	R3017 R3018	0	0	0	0	0	0	0	0	0	0	0	1K
	C3041 C3042	×	×	×	×	×	×	×	×	×	×	×	100p

#DIFFERENCE TABLE 2

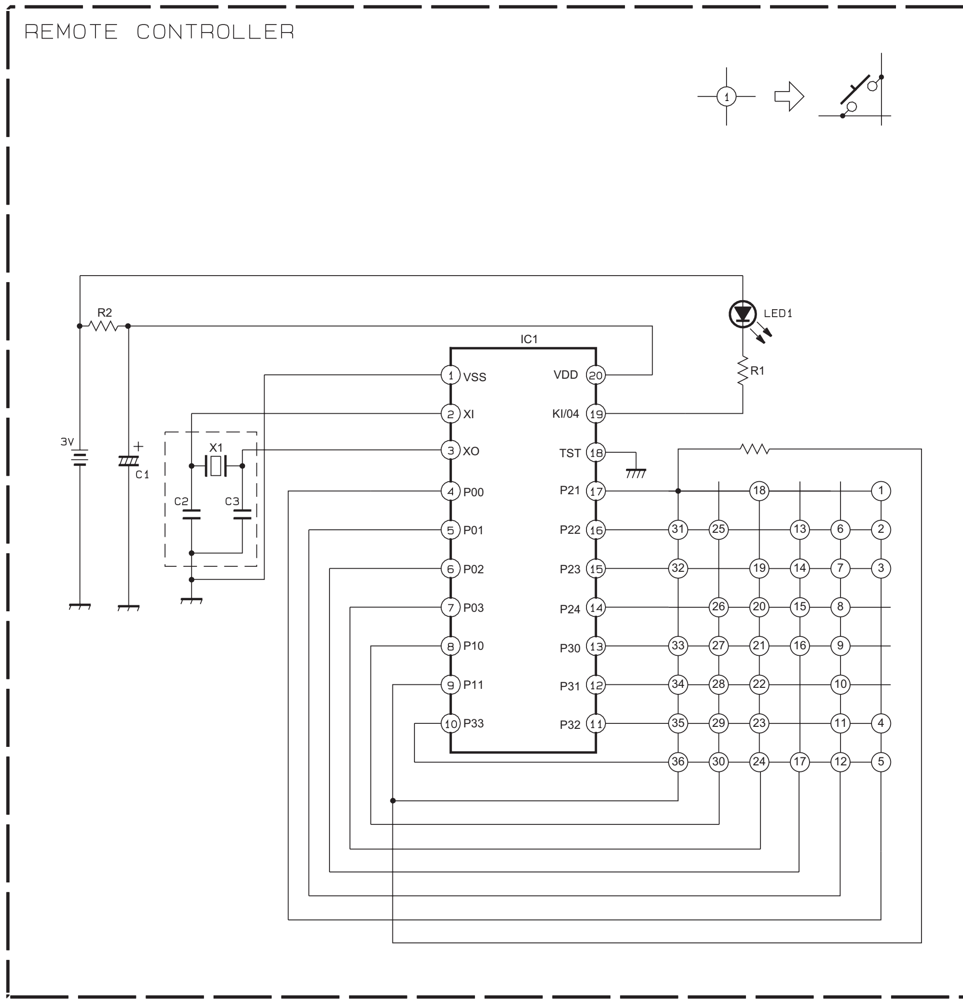
IC3001	A	* MN101D10GJB * MN101DF10GAFJB
	B	* MN101D06HNE * MN101DF06KAFNE
	C	* MN101D10GJE * MN101DF10GAFJE
	D	* MN101D10GJD * MN101DF10GAFJD
	E	* MN101D10FJF * MN101DF10GAFJF

#DIFFERENCE TABLE 3

FLASH WRITER
B3004, B3008, CN3010, R3014

■ REMOTE CONTROLLER SCHEMATIC DIAGRAM

NOTES:
1. All parts shown in this schematic are critical for safety.
2. This schematic is only for reference.
Avoid replacing individual parts.
Replace the entire unit only.

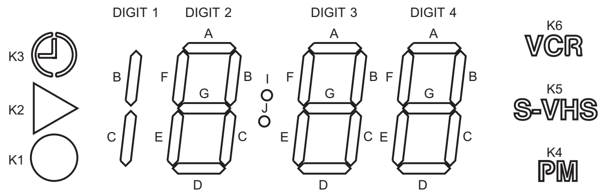

REMOTE CONTROLLER
1
R2
LED1
R1
IC1
3V
C1
X1
C2
C3
1 VSS
2 XI
3 XO
4 P00
5 P01
6 P02
7 P03
8 P10
9 P11
10 P33
VDD 20
KI/04 19
TST 18
P21 17
P22 16
P23 15
P24 14
P30 13
P31 12
P32 11
18
1
31
25
13
6
2
32
19
14
7
3
26
20
15
8
33
27
21
16
9
34
28
22
10
35
29
23
11
4
36
30
24
17
12
5

(LP20878-001#, 020#)

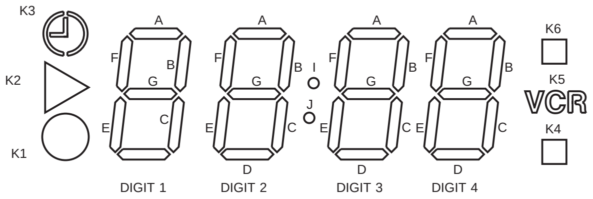
Key No.	Key Name
1	TV POWER
2	● REC
3	■ STOP
4	⏩ ▶▶
5	DISPLAYFF
6	⁺▶▶I
7	TV/CH+
8	SKIP SEARCH
9	PROG
10	PROG CHECK
11	SP/EP
12	◀◀ ⏪ REW
13	▶ PLAY
14	TV/CH−
15	0/AUX
16	8/DAILY(M-F)
17	4/START−
18	TIMER
19	A.MONITOR
20	CH+
21	CANCEL/C.RESET
22	7
23	POWER
24	5/STOP−
25	VOL−
26	2/STOP+
27	TV/VCR
28	▮▮ PAUSE
29	MENU
30	6/DATE−
31	OK/ENTER/OSD
32	3/DATE+
33	VOL+
34	⁻I◀◀
35	TV/INPUT
36	1/START+
37	9/WEEKLY
38	CH−

■ FDP GRID ASSIGNMENT AND ANODE CONNECTION

GRID ASSIGNMENT(HR-J7020UM)


DIGIT 1
DIGIT 2
DIGIT 3
DIGIT 4
K3
K2
K1
A
B
F
G
C
E
D
I
J
K6
VCR
K5
S-VHS
K4
PM

GRID ASSIGNMENT(HR-J7020UA)


K3
K2
K1
A
B
F
G
C
E
D
I
J
DIGIT 1
DIGIT 2
DIGIT 3
DIGIT 4
K6
K5
VCR
K4

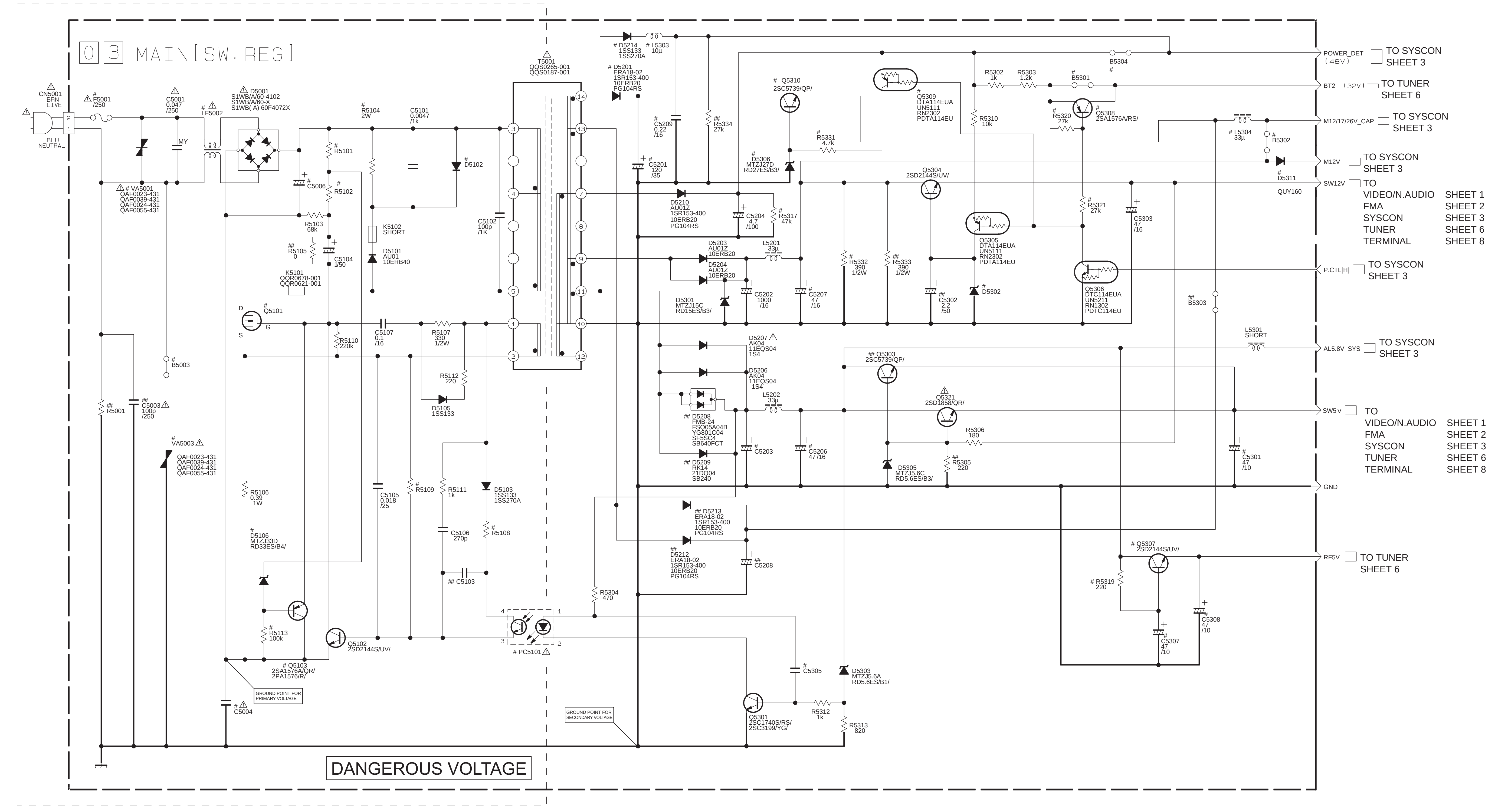
ANODE CONNECTION

No.	CONNECTION
1	CATHODE 2G, 3G, 4G, I, J
2	CATHODE 2F, 3F, 4F, K6
3	CATHODE 2E, 3E,4E, K1
4	CATHODE 2D, 3D, 4D, K4
5	CATHODE 1C, 2C, 3C, 4C, K5
6	CATHODE 1B, 2B, 3B, 4B, K2
7	CATHODE 2A, 3A, 4A, K3
8	COMMON ANODE K3, K2, K5, K4, K1, K6, I, J
9	COMMON ANODE DIGIT4
10	COMMON ANODE DIGIT3
11	COMMON ANODE DIGIT2
12	COMMON ANODE DIGIT1

ANODE CONNECTION

No.	CONNECTION
1	CATHODE 1G, 2G, 3G, 4G, I, J
2	CATHODE 1F, 2F, 3F, 4F, K6
3	CATHODE 1E, 2E, 3E, 4E, K1
4	CATHODE 1D, 2D, 3D, 4D, K4
5	CATHODE 1C, 2C, 3C, 4C, K5
6	CATHODE 1B, 2B, 3B, 4B, K2
7	CATHODE 1A, 2A, 3A, 4A, K3
8	COMMON ANODE K3, K2, K5, K4, K1, K6, I, J
9	COMMON ANODE DIGIT 4
10	COMMON ANODE DIGIT 3
11	COMMON ANODE DIGIT 2
12	COMMON ANODE DIGIT 1

■ MAIN(SW.REG) SCHEMATIC DIAGRAM


03 MAIN[SW.REG]
CN5001 BRN LIVE
BLU NEUTRAL
# F5001 /250
C5001 0.047 /250
MY
# LF5002
D5001 S1WB/A/60-4102 S1WB/A/60-X S1WB(A) 60F4072X
# VA5001 QAF0023-431 QAF0039-431 QAF0024-431 QAF0055-431
# R5104 2W
C5101 0.0047 /1k
# R5101
# C5006
# R5102
D5102
R5103 68k
## R5105 0
# C5104 1/50
C5102 100p /1K
K5102 SHORT
D5101 AU01 10ERB40
K5101 QQR0678-001 QQR0621-001
T5001 QQS0265-001 QQS0187-001
# Q5101
D S G
# B5003
## R5001
## C5003 100p /250
# VA5003 QAF0023-431 QAF0039-431 QAF0024-431 QAF0055-431
R5110 220k
C5107 0.1 /16
R5107 330 1/2W
R5112 220
D5105 1SS133
C5105 0.018 /25
# R5109
R5111 1k
D5103 1SS133 1SS270A
C5106 270p
# R5108
## C5103
R5106 0.39 1W
# D5106 MTZJ33D RD33ES/B4/
# R5113 100k
# Q5103 2SA1576A/QR/ 2PA1576/R/
Q5102 2SD2144S/UV/
# PC5101
# C5004
GROUND POINT FOR PRIMARY VOLTAGE
GROUND POINT FOR SECONDARY VOLTAGE
DANGEROUS VOLTAGE
# D5214 1SS133 1SS270A
# L5303 10µ
# D5201 ERA18-02 1SR153-400 10ERB20 PG104RS
# C5209 0.22 /16
## R5334 27k
# Q5310 2SC5739/QP/
# C5201 120 /35
D5306 MTZJ27D RD27ES/B3/
D5210 AU01Z 1SR153-400 10ERB20 PG104RS
C5204 4.7 /100
# R5317 47k
D5203 AU01Z 10ERB20
D5204 AU01Z 10ERB20
L5201 33µ
D5301 MTZJ15C RD15ES/B3/
C5202 1000 /16
# C5207 47 /16
# R5331 4.7k
Q5309 DTA114EUA UN5111 RN2302 PDTA114EU
Q5304 2SD2144S/UV/
Q5305 DTA114EUA UN5111 RN2302 PDTA114EU
# R5332 390 1/2W
## R5333 390 1/2W
## C5302 2.2 /50
# D5302
R5302 1k
R5303 1.2k
# B5301
B5304
# R5310 10k
# R5320 27k
# Q5308 2SA1576A/RS/
# R5321 27k
C5303 47 /16
Q5306 DTC114EUA UN5211 RN1302 PDTC114EU
# L5304 33µ
# B5302
# D5311
QUY160
## B5303
D5207 AK04 11EQS04 1S4
D5206 AK04 11EQS04 1S4
## D5208 FMB-24 FSQ05A04B YG801C04 SF5SC4 SB640FCT
## D5209 RK14 21DQ04 SB240
L5202 33µ
# C5203
# C5206 47 /16
## Q5303 2SC5739/QP/
Q5321 2SD1858/QR/
R5306 180
D5305 MTZJ5.6C RD5.6ES/B3/
## R5305 220
L5301 SHORT
# C5301 47 /10
## D5213 ERA18-02 1SR153-400 10ERB20 PG104RS
## D5212 ERA18-02 1SR153-400 10ERB20 PG104RS
## C5208
R5304 470
# C5305
D5303 MTZJ5.6A RD5.6ES/B1/
Q5301 2SC1740S/RS/ 2SC3199/YG/
R5312 1k
R5313 820
# Q5307 2SD2144S/UV/
# R5319 220
C5307 47 /10
C5308 47 /10
POWER_DET (48V) TO SYSCON SHEET 3
BT2 (32V) TO TUNER SHEET 6
M12/17/26V_CAP TO SYSCON SHEET 3
M12V TO SYSCON SHEET 3
SW12V TO VIDEO/N.AUDIO SHEET 1 FMA SHEET 2 SYSCON SHEET 3 TUNER SHEET 6 TERMINAL SHEET 8
P.CTL[H] TO SYSCON SHEET 3
AL5.8V_SYS TO SYSCON SHEET 3
SW5V TO VIDEO/N.AUDIO SHEET 1 FMA SHEET 2 SYSCON SHEET 3 TUNER SHEET 6 TERMINAL SHEET 8
GND
RF5V TO TUNER SHEET 6
A B C D E F G
1 2 3 4 5

MARK ELEMENTS ARE NOT MOUNTED
DIFFERENCE TABLE

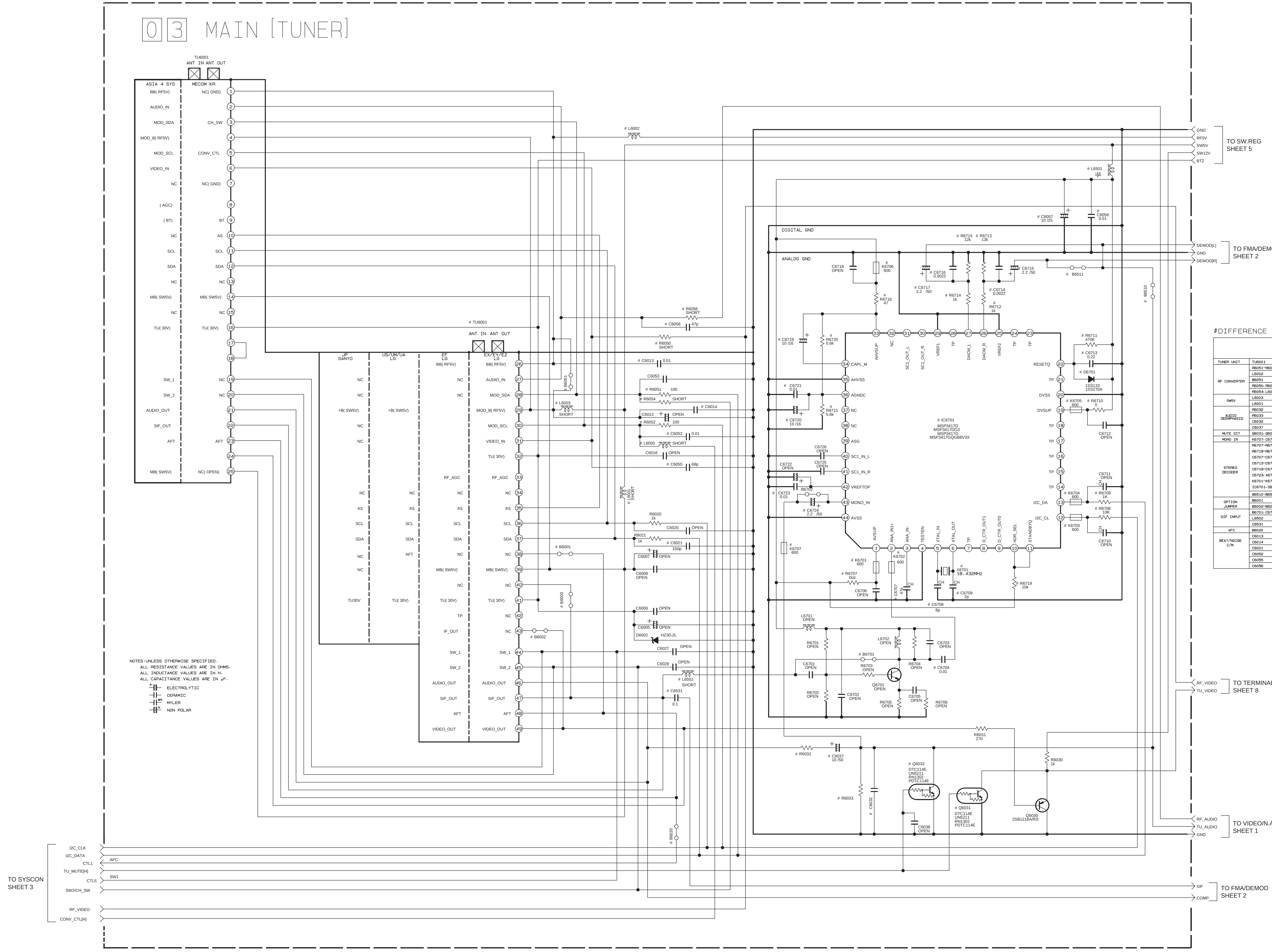
FUNCTION / PART NO. / MODEL	CURRENT CAPABILITY																		POWER SAVE			OVER VOLTAGE	POWER DETECT (AL5.8V)		53" FF/REW			BT2		140" FF/REW	STABILITY	
	F5001	VA5001	LF5002	B5003	VA5003	C5004	C5006	Q5101	R5108	R5109	PC5101	D5102	C5203	C5206	C5301	Q5307 R5319 C5308 C5307	D5302	C5207	L5304	R5101 R5102	R5104	R5317	D5106 Q5103 R5113	D5214 L5303 C5209	B5304	D5201 C5201 D5306	Q5310 R5331 Q5309	D5311	B5301	Q5308 R5320 R5321	B5302	R5332	C5305
PAL	QMF51E2-2R0-J1 QMF51E2-2R0 QMF51W2-2R0-J8	X	QQR0978-001 QQR0608-001 QQR0609-001 QQR0610-001	X	X	0.0022/250	68/400	2SK2632-CB14 2SK2632 2SK2129-LT 2SK2129	1500	560	PC123Y22FZ PC123F2 ON3171/R1 LTV-817M/BC/	AU01 10ERB40 1SR153-400 ERA18-04	680/16	O	X	O	MTZJ11C RD11ES/B3/	O	O	220k	68k	X	X	X	O	O	O	O	O	X	X	O	0.22/16
NTSC (UM,UA,UB)	QMF51E2-2R0-J1 QMF51E2-2R0 QMF51W2-2R0-J8	X	QQR0978-001 QQR0608-001 QQR0609-001 QQR0610-001	X	X	0.0022/250	68/400	2SK2632-CB14 2SK2632 2SK2129-LT 2SK2129	1500	560	PC123Y22FZ PC123F2 ON3171/R1 LTV-817M/BC/	AU01 10ERB40 1SR153-400 ERA18-04	680/16	X	O	X	MTZJ12A RD12ES/B1/	O	OPEN	220k	68k	X	X	X	O	X	X	SHORT	O	X	O	O	0.22/16
NTSC (JPN)	QMF51N2-1R25-J1 QMF51N2-1R25-J5 QMF51N2-1R25-J7	O	QQR0532-001 QQR0533-001 QQR0516-001 QQR0932-001 QQR0816-001	O	O	0.0047/250	82/200	2SK2043-CB14 2SK2043	1200	1800	PC817X PS2501-1 PC817CD LTV-817M/BC/ PC817	10EDB20 1A3G ERA15-02	1000/16	X	O	X	MTZJ12A RD12ES/B1/	X	OPEN	330k	150k	O	O	O	X	X	X	SHORT	X	O	O	X	0.1/16

NOTES: UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN µF.

+ ELECTROLYTIC
CERAMIC
MY MYLER
N NON POLAR

p20416001a_rev0

■ MAIN(TUNER) SCHEMATIC DIAGRAM


03 MAIN [TUNER]
TU6001
ANT IN ANT OUT
ASIA 4 SYS
MECOM KR
EX/EY/EZ LG
EF LG
US/UM/UA LG
JP SANYO
# IC6701
MSP3417D
MSP3417DG3
MSP3417G
MSP3417GQGB8V3X
DIGITAL GND
ANALOG GND
GND
RF5V
SW5V
SW12V
BT2
TO SW.REG SHEET 5
DEMOD[L]
GND
DEMOD[R]
TO FMA/DEMOD SHEET 2
RF_VIDEO
TU_VIDEO
TO TERMINAL SHEET 8
RF_AUDIO
TU_AUDIO
GND
TO VIDEO/N.AUDIO SHEET 1
SIF
COMP
TO FMA/DEMOD SHEET 2
I2C_CLK
I2C_DATA
CTL1
TU_MUTE[H]
CTL5
SW2/CH_SW
RF_VIDEO
CONV_CTL[H]
AFC
SW1
TO SYSCON SHEET 3
# X6701 18.432MHz
# Q6032 DTC114E UN5211 RN1302 PDTC114E
# Q6031 DTC114E UN5211 RN1302 PDTC114E
Q6030 2SB1218A/R/S
D6002 HZ30-2L
# D6701 1SS133 1SS270A

NOTES:UNLESS OTHERWISE SPECIFIED.
ALL RESISTANCE VALUES ARE IN OHMS.
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

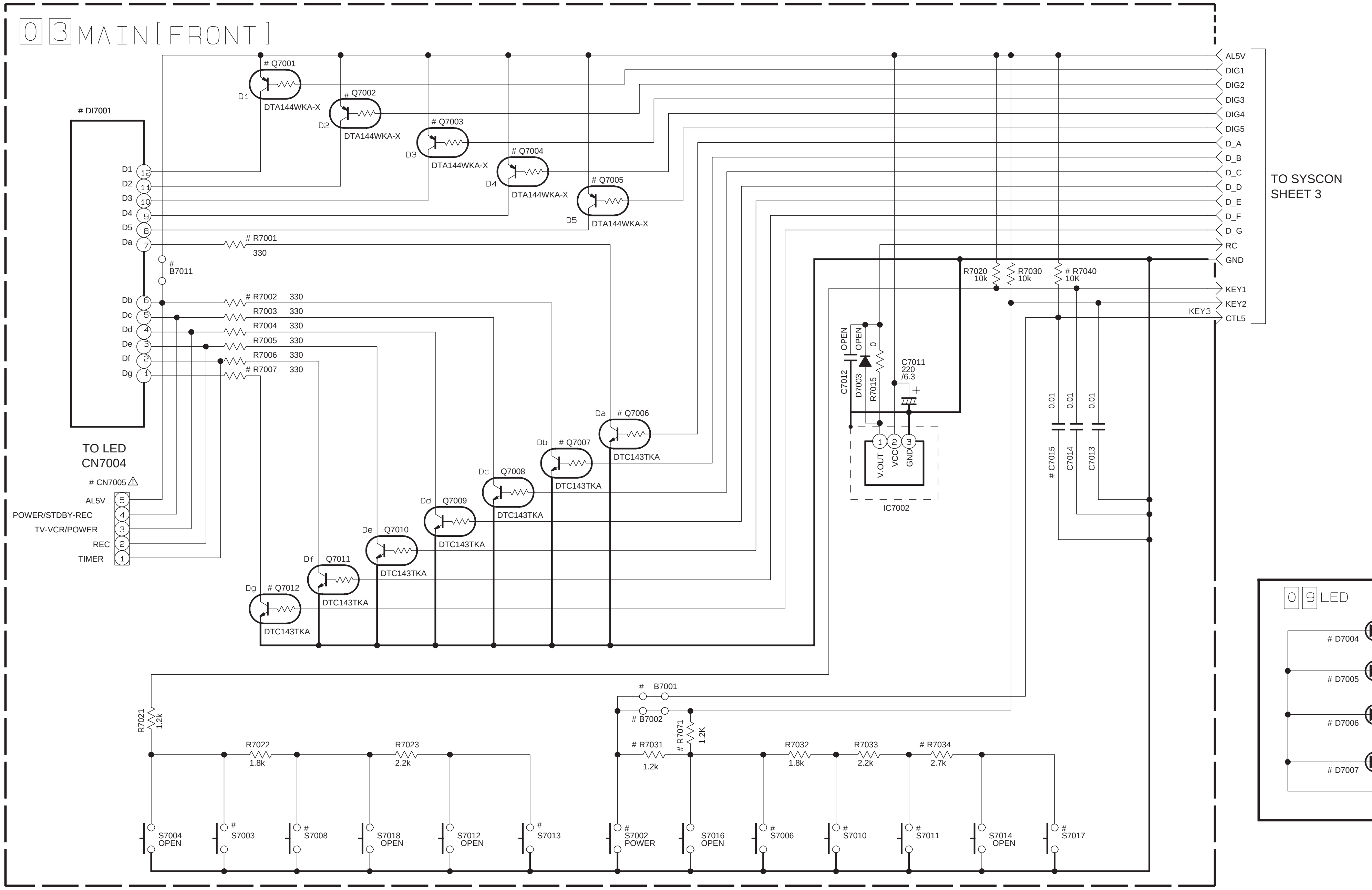
#DIFFERENCE TABLE

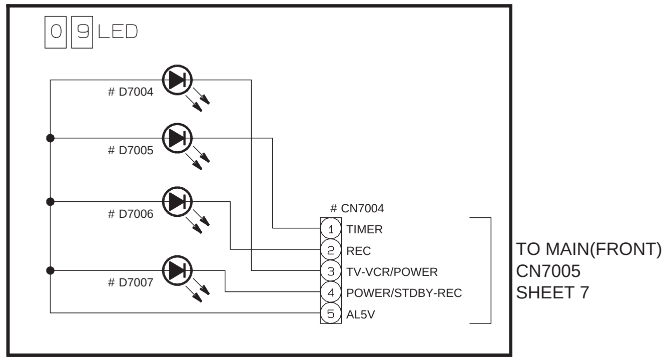
		NTSC			PAL		
		US/UM HIFI UA	MONO UA/UB	JP	EX/EY/EZ STEREO DECODER YES	EX/EY/EZ STEREO DECODER NO	EF
TUNER UNIT	TU6001	QAU0336	QAU0255	QAU0335	QAU0323	QAU0323	QAU0299
RF CONVERTER	R6051-R6052	×	×	×	○	○	×
	L6002	×	×	×	10μ	10μ	SHORT
	B6051	×	×	×	○	○	×
	R6050, R6056	○	○	×	○	○	×
	R6054, L6050	○	○	×	×	×	×
SW5V	L6003	○	○	○	×	×	×
	L6001	×	○	×	○	○	○
AUDIO DEEMPHASIS	R6032	×	15K	×	SHORT	SHORT	SHORT
	R6033	×	10K	×	OPEN	OPEN	OPEN
	C6032	×	0.012	×	OPEN	OPEN	OPEN
	C6037	×	○	×	○	○	○
MUTE CCT	Q6031, Q6032	×	×	×	○	○	○
MONO IN	K6707, C6724	×	×	×	×	×	×
STEREO DECODER	R6707-R6716 R6719-R6721 C6707-C6709 C6713-C6717 C6719-C6721 C6723, X6701 K6701-K6706 IC6701, D6701	×	×	×	○	×	○
	B6510-B6511	×	×	×	×	○	×
OPTION JUMPER	B6001	○	×	×	×	×	×
	B6002-B6003	○	×	○	×	×	×
SIF INPUT	B6701, C6704	×	×	×	○	×	○
	L6502	×	×	×	○	×	○
	C6531	○	×	○	×	×	×
AFC	B6020	○	○	×	○	○	○
BEAT/NOISE C/M	C6013	×	×	×	○	○	○
	C6014	0.01	0.1	×	×	×	×
	C6021	○	×	×	×	×	×
	C6052	×	○	×	×	×	×
	C6055	×	○	×	×	×	×
	C6056	○	○	×	×	×	×

p10619001a_rev0

SHEET 6

■ MAIN(FRONT) SCHEMATIC DIAGRAM


03 MAIN(FRONT)
# DI7001
D1 12
D2 11
D3 10
D4 9
D5 8
Da 7
Db 6
Dc 5
Dd 4
De 3
Df 2
Dg 1
TO LED
CN7004
# CN7005
AL5V 5
POWER/STDBY-REC 4
TV-VCR/POWER 3
REC 2
TIMER 1
# B7011
# Q7001 DTA144WKA-X D1
# Q7002 DTA144WKA-X D2
# Q7003 DTA144WKA-X D3
# Q7004 DTA144WKA-X D4
# Q7005 DTA144WKA-X D5
# R7001 330
# R7002 330
R7003 330
R7004 330
R7005 330
R7006 330
# R7007 330
Da # Q7006 DTC143TKA
Db # Q7007 DTC143TKA
Dc Q7008 DTC143TKA
Dd Q7009 DTC143TKA
De Q7010 DTC143TKA
Df Q7011 DTC143TKA
Dg # Q7012 DTC143TKA
OPEN C7012
OPEN D7003
0 R7015
C7011 220 /6.3
IC7002
V OUT 1
VCC 2
GND 3
R7020 10k
R7030 10k
# R7040 10K
0.01 # C7015
0.01 C7014
0.01 C7013
AL5V
DIG1
DIG2
DIG3
DIG4
DIG5
D_A
D_B
D_C
D_D
D_E
D_F
D_G
RC
GND
KEY1
KEY2
KEY3
CTL5
TO SYSCON
SHEET 3
R7021 1.2k
R7022 1.8k
R7023 2.2k
# B7001
# B7002
# R7071 1.2K
# R7031 1.2k
R7032 1.8k
R7033 2.2k
# R7034 2.7k
S7004 OPEN
# S7003
# S7008
S7018 OPEN
S7012 OPEN
# S7013
# S7002 POWER
S7016 OPEN
# S7006
# S7010
# S7011
S7014 OPEN
# S7017


09 LED
# D7004
# D7005
# D7006
# D7007
# CN7004
1 TIMER
2 REC
3 TV-VCR/POWER
4 POWER/STDBY-REC
5 AL5V
TO MAIN(FRONT)
CN7005
SHEET 7

	HR-V510EX	HR-V210EX	HR-V515EF	HR-V415ER HR-V411AS HR-V410AG	HR-V216ER HR-V215ER HR-V210AA HR-V217AG HR-V211AS HR-V210AG	HR-P211ER HR-P111AG HR-P110AG	HR-J7020UM	HR-J7020UA	HR-J4020UA	HR-J4020UB	HR-A20K
DI7001 Q7001, Q7002, Q7003 Q7004, Q7005, Q7006 Q7007, Q7012 R7001, R7002, R7007	○	○	○	○	○	×	○	○	×	×	○
CN7005, CN7004	×	×	×	×	×	3-PIN	×	×	5-PIN	5-PIN	×
B7011	×	×	×	×	×	○	×	×	○	○	×
D7005, D7006	×	×	×	×	×	×	×	×	○	○	×
D7004, D7007	×	×	×	×	×	○	×	×	○	○	×
R7040, C7015, B7001	×	×	×	×	×	×	○	○	×	×	×
R7071	×	×	×	×	×	×	○	○	×	×	×
R7031	○	○	○	○	○	×	×	×	○	○	○
B7002	○	○	○	○	○	×	×	×	○	○	○

	S7002	S7006	S7010	S7011	S7017	S7003	S7008	S7013
HIFI	POWER	REW	REC	ST/EJ	PR+	PR−	FF	PLAY
MONO	POWER	REW	REC	ST/EJ	PR+	PR−	FF	PLAY
VCP	POWER	REW	REC	ST/EJ	SP/LP/EP	COLOR SYSTEM	FF	PLAY

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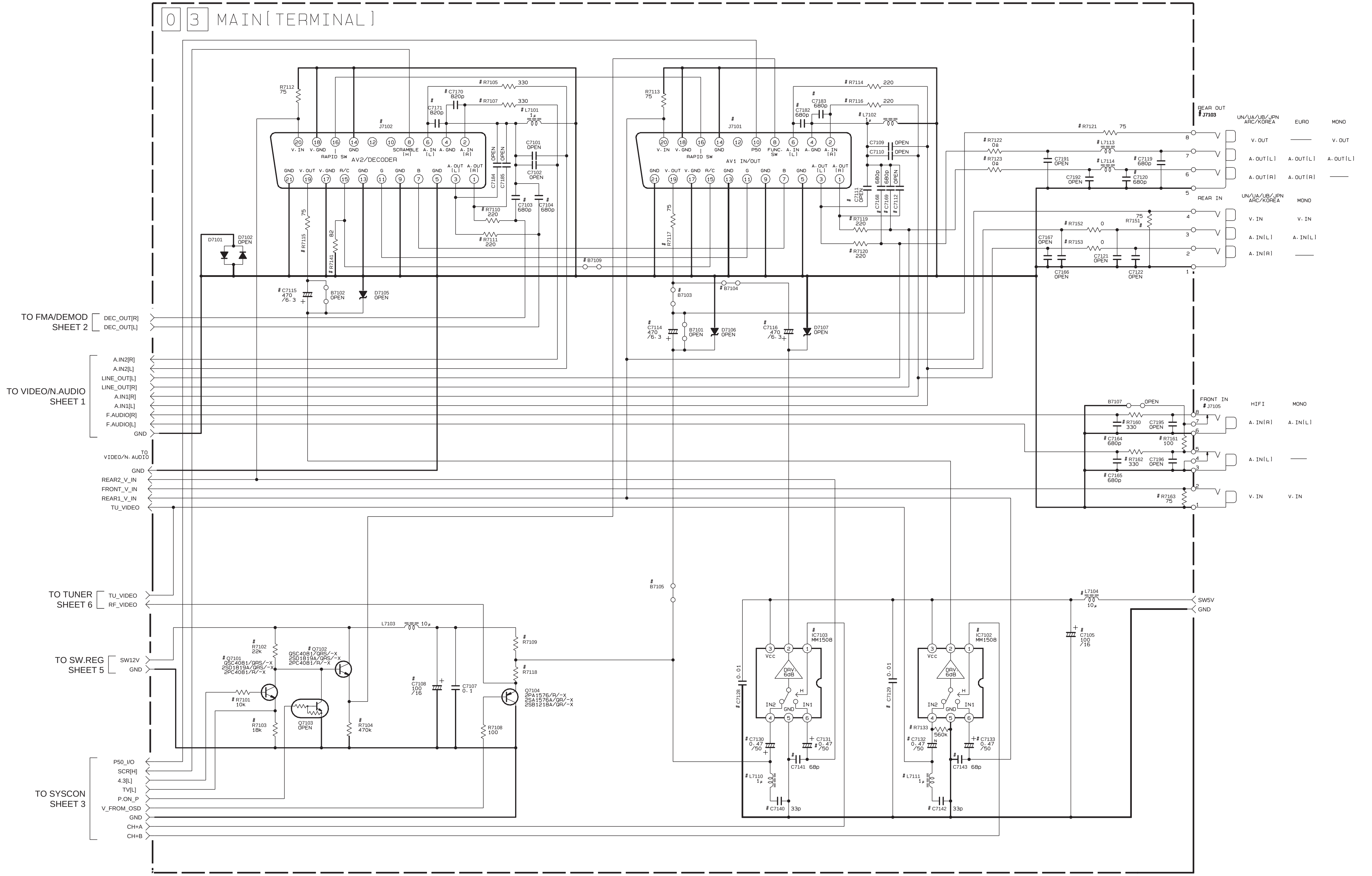
ALL INDUCTANCE VALUES ARE IN H.
ALL CAPACITANCE VALUES ARE IN μF.
ELECTROLYTIC
CERAMIC
MY MYLER
N NON POLAR

5 4 3 2 1

A B C D E F G

■ MAIN(TERMINAL) SCHEMATIC DIAGRAM



03 MAIN[TERMINAL]
TO FMA/DEMOD SHEET 2
DEC_OUT[R]
DEC_OUT[L]
TO VIDEO/N.AUDIO SHEET 1
A.IN2[R]
A.IN2[L]
LINE_OUT[L]
LINE_OUT[R]
A.IN1[R]
A.IN1[L]
F.AUDIO[R]
F.AUDIO[L]
GND
TO VIDEO/N. AUDIO
GND
REAR2_V_IN
FRONT_V_IN
REAR1_V_IN
TU_VIDEO
TO TUNER SHEET 6
TU_VIDEO
RF_VIDEO
TO SW.REG SHEET 5
SW12V
GND
TO SYSCON SHEET 3
P50_I/O
SCR[H]
4.3[L]
TV[L]
P.ON_P
V_FROM_OSD
GND
CH+A
CH+B
J7102 RAPID SW AV2/DECODER
J7101 RAPID SW AV1 IN/OUT
REAR OUT J7103
REAR IN
FRONT IN J7105
UN/UA/UB/JPN ARC/KOREA
EURO
MONO
HIFI
V.OUT
A.OUT[L]
A.OUT[R]
V.IN
A.IN[L]
A.IN[R]
IC7103 MM1508
IC7102 MM1508
DRV 6dB
Q7101 QSC4081/QRS/-X 2SD1819A/QRS/-X 2PC4081/R/-X
Q7102 QSC4081/QRS/-X 2SD1819A/QRS/-X 2PC4081/R/-X
Q7103 OPEN
Q7104 2PA1576/R/-X 2SA1576A/QR/-X 2SB1218A/QR/-X
L7103 10μ
L7104 10μ
SW5V
GND

AUDIO

#DIFFERENCE TABLE 1

FRONT INPUT		J7105	R INPUT		L INPUT			C7195 C7196
			R7160	C7164	R7162	R7161	C7165	
EURO/ASIA	3P	QNN0524-001	0Ω	×	0Ω	×	×	×
	2P(MONO)	QNN0634-001	0Ω	×	×	×	×	×
	NO	×	×	×	×	×	×	×
JAPAN	3P(Y.W.R)	QNN0524-001	0Ω	×	0Ω	×	×	×
UM/UA	3P(BLACK)	QNN0524-02	0Ω	×	0Ω	×	×	×
UA/UB	2P(MONO)	QNN0634-002	0Ω	×	×	×	×	×

#DIFFERENCE TABLE 2

REAR IN/OUT			J7103	L INPUT		R INPUT		L OUTPUT			R OUTPUT			
				R7152	C7121 C7166	R7153	C7122 C7167	L7113	R7122	C7119	L7114	R7123	C7120	C7191 C7192
REAR IN & REAR OUT	ASIA HIFI	3P	QNN0526-001	0Ω	OPEN	0Ω	OPEN	SHORT	0Ω	×	SHORT	0Ω	×	OPEN
	ASIA MONO	2P	QNN0633-001	0Ω	OPEN	×	OPEN	SHORT	0Ω	×	×	×	×	OPEN
	UA	3P	QNN0526-001	0Ω	OPEN	0Ω	OPEN	SHORT	0Ω	×	SHORT	0Ω	×	OPEN
	UA/UB	2P	QNN0633-001	0Ω	OPEN	×	OPEN	SHORT	0Ω	×	×	×	×	OPEN
REAR OUT ONLY	EUROPE	2P-LR	QNN0632-001	×	OPEN	×	OPEN	SHORT	0Ω	×	SHORT	0Ω	×	OPEN
	UM/JAPAN	3P	QNN0586-001	×	OPEN	×	OPEN	SHORT	0Ω	×	SHORT	0Ω	×	OPEN

#DIFFERENCE TABLE 3

SCART IN/OUT(EUROPE)		AV1			AV2				EMC
		J7101	R7114 R7116 R7119 R7120 C7168 C7169 C7182 C7183	L7102	J7102	R7105 R7107 C7170 C7171	R7110 R7111 C7103 C7104	L7101	C7101 C7102 C7109 C7110 C7111 C7112 C7184 C7185
2X	WITH CH+	○	○	○	○	○	○	○	×
	WITHOUT CH+	○	○	○	○	○	×	○	×
1X		○	○	○	×	×	×	×	×
NO		×	×	×	×	×	×	×	×

VIDEO

#DIFFERENCE TABLE 4

INPUT/OUTPUT		J7101	J7102 R7112	J7103	J7105 R7163	R7113	R7117	R7121	R7151
FRONT V IN		×	×	×	○	×	×	×	×
REAR1 IN	RCA	×	×	○	×	×	×	×	○
	L-1 Peri	○	×	×	×	○	×	×	×
FRONT/REAR1 IN	RCA	×	×	○	○	×	×	×	○
	L-1 Peri	○	×	×	○	○	×	×	×
REAR2 IN	L-2 Peri	×	○	×	×	×	×	×	×
REAR OUT	RCA	×	×	○	×	×	×	○	×
	L-1 Peri	○	×	×	×	×	○	×	×

#DIFFERENCE TABLE 5

CH+	IC7102, IC7103	R7115, R7133, R7141	C7105, C7108, C7115, C7116, C7128, C7129, C7130, C7131, C7132, C7133, B7104	L7104	B7103, B7105, C7114	R7109	R7118
YES	○	○	○	○	×	QRE123J-471X	470
NO	×	×	×	×	○	QRE123J-331X	0

#DIFFERENCE TABLE 6

	C7108	B7105	B7109
NTSC	×	○	×
PAL-M	×	○	×
PAL-N	×	○	×
PAL/ARC	○	○	×
with SECAM	○	×	○

#DIFFERENCE TABLE 7

CH+ EMC	C7140, C7141, C7142, C7143, L7110, L7111
YES	○
NO	×

#DIFFERENCE TABLE 8

16:9	R7101, R7102, R7103, R7104, Q7101, Q7102
YES	○
NO	×

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ELECTROLYTIC
CERAMIC
MYLER
NON POLAR

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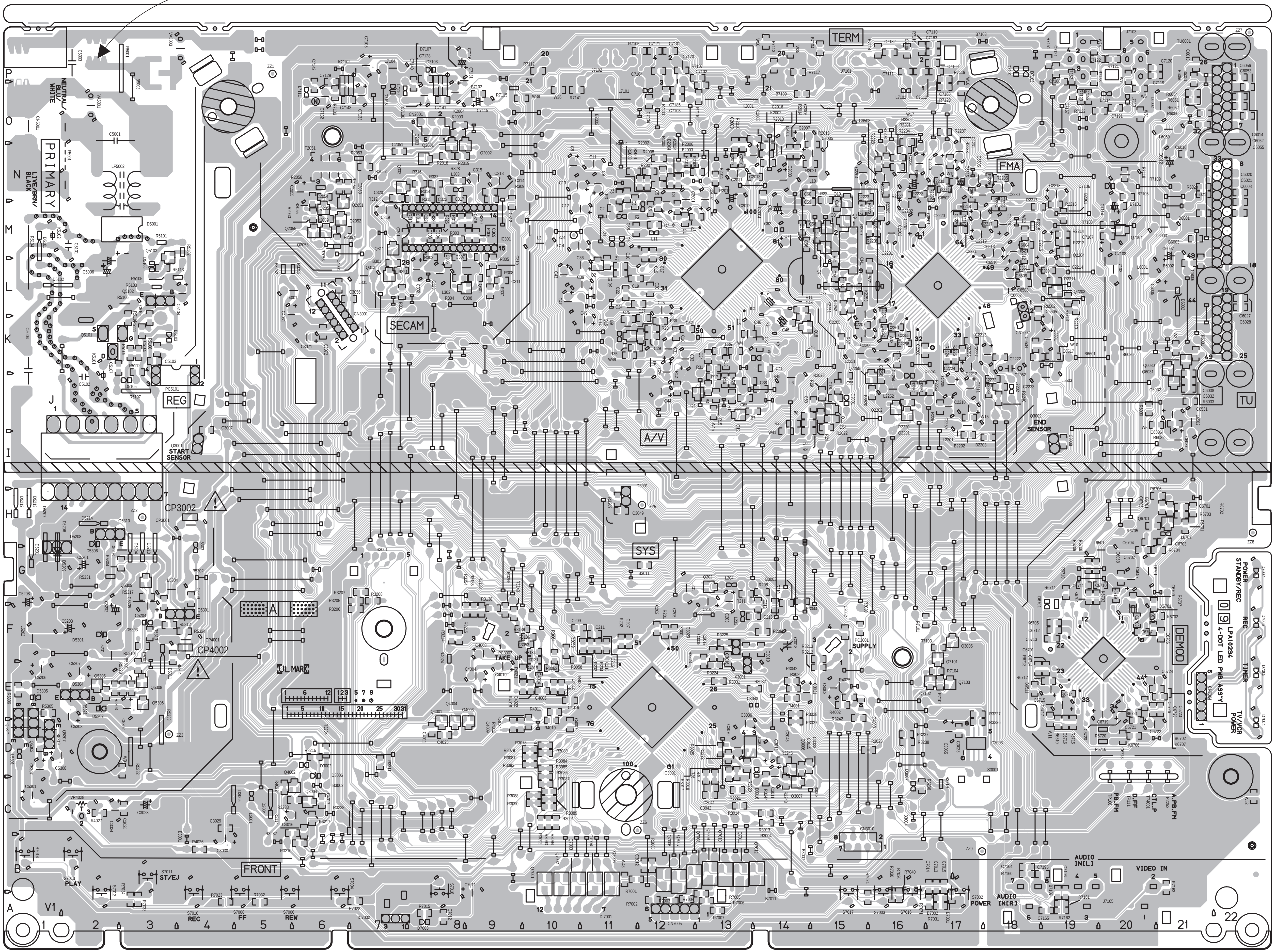
SHEET 8

■ MAIN CIRCUIT BOARD

<03> MAIN
LPB10234-001E


DANGEROUS VOLTAGE
PRIMARY
NEUTRAL/BLU/WHITE
LIVE/BRN/BLACK
REG
START SENSOR
SECAM
TERM
FMA
TU
A/V
END SENSOR
SYS
DEMOD
CP3002
CP4002
TAKE UP
SUPPLY
L MARK
FRONT
PLAY
ST/EJ
REC
FF
REW
POWER
AUDIO IN[L]
AUDIO IN[R]
VIDEO IN
STANDBY/REC
POWER
REC
TIMER
TV/VCR POWER
LPA10234 4-DOT LED PWB ASS'Y
A.PB.FM
CTL.P
D.FF
PB.FM
V1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P

COMPONENT PARTS LOCATION GUIDE <MAIN> LPB10234-001E

REF.NO.	LOCATION
CAPACITOR	
C1	B C 12M
C2	B C 11M
C3	B C 11M
C4	A D 12M
C5	B C 12M
C6	B C 12M
C7	B C 12M
C8	A D 10N
C9	A D 11N
C10	A D 11M
C11	A D 11N
C12	A D 11M
C13	A D 11N
C14	A D 11M
C15	B C 12M
C17	B C 12M
C19	B C 11L
C20	B C 12L
C22	B C 11L
C24	B C 12L
C25	A D 12L
C26	A D 12K
C27	B C 12K
C29	B C 12K
C30	B C 12K
C31	A D 12K
C32	B C 12K
C33	A D 12K
C34	B C 13K
C35	B C 13K
C36	A D 11L
C37	B C 14K
C38	B C 13J
C39	A D 11L
C40	B C 13K
C41	B C 14K
C43	A D 10L
C44	A D 12J
C45	B C 15K
C46	B C 14K
C47	A D 10L
C48	B C 14K
C49	A D 11K
C50	B C 15J
C54	B C 15J
C55	B C 15J
C56	B C 14M
C57	B C 14M
C58	B C 15M
C59	B C 14M
C60	B C 14N
C61	A D 14M
C62	A D 14M
C63	B C 15M
C64	B C 15M
C65	B C 13J
C66	B C 14J
C68	B C 11M
C71	A D 14M
C75	B C 11K
C76	B C 15L
C77	B C 15L
C78	B C 15J
C201	A D 13G
C202	B C 12F
C203	A D 13G
C205	B C 12F
C207	B C 11F
C209	B C 10F
C211	B C 11F
C212	B C 14F
C213	B C 14F
C215	B C 11F
C216	B C 11F
C301	B C 7M
C302	A D 8L
C303	B C 8M
C304	B C 8M
C305	B C 8L
C307	B C 8M
C308	B C 9L
C309	B C 9M
C310	B C 9L
C311	B C 9L
C312	B C 9M
C313	A D 9N
C314	B C 9N
C315	A D 9N
C316	B C 8M
C317	B C 8N
C318	B C 8M
C319	A D 7M
C320	B C 7N
C321	B C 8M
C322	B C 8N
C323	A D 8L
C2001	A D 12M
C2002	A D 13M
C2003	A D 14N
C2004	B C 14N
C2005	A D 14N
C2006	B C 14N
C2007	A D 14O
C2008	A D 14N
C2009	B C 13N
C2010	B C 13N
C2011	A D 13N
C2012	A D 13N
C2013	B C 14N
C2016	B C 14N
C2051	B C 7N
C2052	A D 18K
C2053	B C 6N
C2054	B C 6N
C2055	A D 6N
C2201	A D 16M
C2202	A D 16M
C2203	A D 16M
C2204	A D 15N
C2205	A D 16L
C2206	A D 16K
C2207	B C 15K
C2208	B C 16K
C2209	A D 17J
C2210	A D 17J
C2211	A D 17J
C2212	A D 17K
C2213	B C 17K
C2214	A D 19L
C2215	A D 19M
C2216	A D 18M
C2217	B C 18M
C2218	A D 19N
C2219	A D 17M
C2220	A D 17M
C2221	B C 17M
C2222	B C 18K
C2223	B C 15N
C2224	B C 17K
C2225	A D 17N
C2226	A D 16N
C2227	A D 18K
C2228	B C 18M
C2229	B C 17M
C2230	A D 18N
C2231	A D 17N
C2232	B C 18J
C2233	B C 18J
C2251	B C 16L
C2252	B C 15L
C2253	B C 15L
C2254	A D 16K
C2255	B C 16K
C2256	B C 16K
C2257	B C 16K
C2258	B C 16J
C2259	A D 17J
C2261	B C 16K
C2262	B C 16K
C3007	B C 4J
C3008	B C 19I
C3011	A D 14D
C3012	B C 12B
C3013	A D 14D
C3015	B C 14D
C3016	B C 13F
C3017	B C 13F
C3018	A D 14F
C3019	B C 14F
C3020	B C 13F
C3021	A D 14E
C3022	B C 14D
C3023	B C 17D
C3024	A D 2C
C3025	B C 3C
C3028	A D 3C
C3029	B C 4C
C3030	A D 4B
C3035	B C 13F
C3036	A D 13D
C3041	B C 13C
C3042	B C 13C
C3043	A D 14E
C3045	A D 14E
C3049	B C 11H
C3052	B C 15F
C3053	B C 10F
C3055	A D 17D
C3056	B C 6L
C3070	A D 13D
C3071	A D 6K
C3072	B C 6K
C4001	B C 6L
C4002	A D 15E
C4004	A D 9E
C4006	B C 10E
C4007	B C 10D
C4008	A D 9F
C4009	B C 9D
C4010	A D 9E
C4011	B C 8D
C4012	B C 10E
C4014	B C 10E
C4016	A D 5C
C4017	B C 6C
C4019	B C 10E
C4022	B C 10E
C4024	B C 10D
C4025	B C 8D
C4031	A D 5L
C5001	A D 2O
C5003	A D 2P
C5004	A D 1K
C5006	A D 2L
C5101	A D 2M
C5102	A D 2J
C5103	B C 3K
C5104	A D 4L
C5105	B C 3K
C5106	B C 3K
C5107	B C 2K
C5201	A D 2G
C5202	A D 2G
C5203	A D 1F
C5204	A D 3F
C5206	A D 1E
C5207	A D 2E
C5208	A D 1G
C5209	B C 4G
C5301	A D 1C
C5302	A D 3E
C5303	A D 2E
C5305	B C 3G
C5307	A D 1D
C5308	A D 1D
C6005	A D 21L
C6006	B C 21L
C6007	A D 21M
C6008	B C 22M
C6012	A D 21N
C6013	B C 21P
C6014	B C 22O
C6016	B C 21N
C6020	B C 22N
C6021	B C 22M
C6027	B C 22L
C6028	B C 22L
C6032	B C 21J
C6037	A D 21I
C6038	B C 21K
C6052	B C 22O
C6053	B C 22O
C6055	B C 22O
C6056	B C 22P
C6057	A D 20G
C6058	B C 20G
C6501	B C 16M
C6502	A D 16N
C6503	A D 16N
C6504	B C 18K
C6505	A D 19K
C6506	A D 21J
C6508	B C 18L
C6509	B C 18L
C6510	A D 18M
C6511	B C 18L
C6512	B C 18M
C6513	A D 18M
C6514	B C 17N
C6515	A D 17N
C6517	B C 18K
C6531	B C 21J
C6601	A D 19K
C6602	A D 18L
C6604	B C 18M
C6605	A D 17N
C6701	B C 21H
C6702	B C 20G
C6703	B C 21H
C6704	B C 20H
C6705	B C 21H
C6706	B C 21F
C6707	B C 20F
C6708	B C 20F
C6709	B C 20G
C6710	B C 20G
C6711	B C 19G
C6712	B C 19F
C6713	B C 19F
C6714	B C 19E
C6715	A D 19E
C6716	B C 19D
C6717	A D 19E
C6718	B C 20D
C6719	A D 19E
C6720	A D 20E
C6721	B C 20D
C6722	A D 20D
C6723	B C 21E
C6724	A D 20E
C6725	B C 20E
C6726	B C 20E
C7011	A D 9A
C7012	B C 8A
C7013	B C 17B
C7014	B C 17B
C7015	B C 17B
C7101	B C 12P
C7102	B C 13P
C7103	B C 12O
C7104	B C 12O
C7105	A D 7P
C7107	B C 20M
C7108	A D 20M
C7109	B C 16P
C7110	B C 17P
C7111	B C 16P
C7112	B C 16P
C7114	A D 20M
C7115	A D 9O
C7116	A D 8P
C7119	B C 20P
C7120	B C 20P
C7121	B C 19P
C7122	B C 19P
C7128	B C 8P
C7129	B C 6P
C7130	A D 8O
C7131	A D 8O
C7132	A D 6O
C7133	A D 7O
C7140	B C 8P
C7141	B C 8O
C7142	B C 6P
C7143	B C 6O
C7164	B C 18B
C7165	B C 19A
C7166	B C 19P
C7167	B C 19O
C7168	B C 17P
C7169	B C 17P
C7170	B C 12P
C7171	B C 12P
C7182	B C 16P
C7183	B C 17P
C7184	B C 12P
C7185	B C 12O
C7191	B C 20O
C7192	B C 19O
C7195	B C 19B
C7196	B C 19A
CONNECTOR	
CN1	A D 15M
CN2001	A D 8O
CN2002	A D 18L
CN3001	A D 6L
CN3010	A D 16B
CN5001	A D 1O
CN7004	A D 21E
CN7005	A D 12A
DIODE	
D3	A D 11M
D4	A D 11M
D5	A D 14K
D2001	A D 15J
D2251	A D 16J
D3001	A D 11H
D3002	A D 6D
D3004	A D 5C
D3005	A D 4C
D3006	A D 6D
D3007	A D 16C
D3016	A D 14D
D4003	B C 15E
D5001	B C 3M
D5101	A D 1L
D5102	A D 2L
D5103	A D 3K
D5105	A D 2J
D5106	A D 3L
D5201	A D 1H
D5203	A D 3H
D5204	A D 3H
D5206	A D 1H
D5207	A D 1H
D5208	A D 1G
D5209	A D 1H
D5210	A D 3H
D5212	A D 1I
D5213	A D 1I
D5214	A D 2H
D5301	A D 2F
D5302	A D 2E
D5303	A D 3F
D5305	A D 1E
D5306	A D 2H
D5311	A D 3E
D6002	A D 21K
D6701	A D 19F
D7003	A D 8A
D7004	A D 22D
D7005	A D 22E
D7006	A D 22F
D7007	A D 22G
D7101	A D 18P
D7102	A D 18P
D7105	A D 7P
D7106	A D 20N
D7107	A D 8P
IC	
IC1	B C 13L
IC301	A D 7M
IC2201	B C 17L
IC3001	B C 12E
IC3002	B C 13D
IC3003	B C 17D
IC6701	B C 20F
IC7002	A D 7A
IC7102	B C 6P
IC7103	B C 8P
COIL	
L1	A D 11M
L2	A D 12N
L3	A D 10M
L5	A D 12K
L6	A D 14J
L7	A D 14K
L10	A D 15N
L11	A D 12M
L14	A D 11K
L15	A D 13K
L201	A D 12G
L203	A D 13F
L204	A D 13G
L301	A D 7L
L302	A D 9L
L303	A D 9N
L2001	A D 14O
L2201	A D 17J
L2202	A D 18J
L2251	A D 15K
L2252	A D 16J
L3001	A D 5C
L4001	A D 5L
L5201	A D 2F
L5202	A D 1F
L5301	A D 1D
L5303	A D 4H
L5304	A D 3G
L6001	A D 20L
L6002	A D 21O
L6003	A D 21M
L6050	A D 21O
L6501	A D 20G
L6502	A D 21J
L6503	A D 18J
L6701	A D 20G
L6702	A D 21H
L7101	A D 12O
L7102	A D 16O
L7103	A D 20L
L7104	A D 7P
L7110	A D 7P
L7111	A D 6P
L7113	A D 20O
L7114	A D 19O
TRANSISTOR	
Q2	B C 11L
Q4	B C 13J
Q7	B C 15M
Q8	B C 15M
Q9	B C 15M
Q10	B C 15N
Q11	B C 15J
Q12	B C 13J
Q15	B C 11K
Q18	B C 14K
Q202	B C 13G
Q301	B C 9L
Q302	B C 7N
Q311	B C 7M
Q312	B C 7L
Q2001	B C 8N
Q2002	B C 9N
Q2003	B C 8N
Q2051	B C 6M
Q2052	B C 6M
Q2053	B C 6M
Q2054	B C 6M
Q2055	B C 6M
Q2201	B C 16J
Q2202	B C 16J
Q2203	B C 19L
Q2204	B C 19M
Q2255	B C 16J
Q3001	A D 4I
Q3002	A D 18I
Q3004	B C 6C
Q3005	B C 17F
Q3006	B C 14D
Q3007	B C 14C
Q4001	B C 8D
Q4002	B C 6C
Q4003	B C 9D
Q4004	B C 8D
Q5101	A D 2K
Q5102	A D 3L
Q5103	B C 3M
Q5301	A D 4F
Q5303	A D 1D
Q5304	A D 2E
Q5305	B C 2E
Q5306	B C 3E
Q5307	A D 1D
Q5308	B C 3E
Q5309	B C 3G
Q5310	A D 3H
Q5321	A D 1D
Q6030	B C 21K
Q6031	B C 21K
Q6032	B C 21J
Q6701	B C 21H
Q7001	B C 10B
Q7002	B C 10B
Q7003	B C 10B
Q7004	B C 11B
Q7005	B C 11B
Q7006	B C 12B
Q7007	B C 12B
Q7008	B C 12B
Q7009	B C 13B
Q7010	B C 13B
Q7011	B C 13B
Q7012	B C 14B
Q7101	B C 17F
Q7102	B C 17E
Q7103	B C 17E
Q7104	B C 20M
RESISTOR	
R1	B C 13M
R2	B C 12M
R3	B C 11N
R5	B C 11N
R6	B C 11L
R7	B C 11L
R11	B C 14L
R12	B C 12J
R14	B C 13J
R15	B C 13J
R16	B C 13J
R17	B C 13J
R18	B C 13K
R20	B C 12K
R21	B C 15L
R22	B C 15N
R24	B C 15J
R28	B C 14J
R29	B C 15J
R30	B C 14J
R31	B C 13K
R35	B C 11K
R36	B C 13D
R37	B C 15K
R38	B C 12K
R48	B C 14J
R201	B C 12F
R202	B C 11F
R203	B C 11F
R204	B C 11F
R206	B C 14F
R208	B C 14G
R210	B C 14F
R211	B C 13G
R301	B C 7L
R302	B C 8M
R303	B C 8M
R304	B C 8L
R305	B C 9M
R306	B C 9M
R307	B C 9L
R308	B C 9L
R309	B C 9N
R310	B C 9M
R311	B C 8M
R312	B C 8N
R313	B C 8M
R314	B C 8N
R315	B C 8N
R316	B C 8N
R321	B C 7L
R326	B C 8M
R327	B C 8N
R328	B C 8N
R329	B C 8M
R2001	B C 12N
R2002	B C 12N
R2003	B C 12N
R2004	B C 11N
R2005	B C 12N
R2006	B C 13N
R2007	B C 12N
R2008	B C 12N
R2009	B C 13N
R2010	B C 12N
R2011	B C 13N
R2012	B C 13N
R2013	B C 14N
R2014	B C 14N
R2015	B C 15N
R2016	B C 13N
R2017	B C 13N
R2018	B C 8N
R2019	B C 8N
R2021	B C 15N
R2022	B C 15J
R2023	B C 15J
R2024	B C 12N
R2052	B C 7N
R2053	A D 7N
R2054	B C 6N
R2055	B C 6N
R2056	A D 6N
R2057	B C 6M
R2058	B C 6M
R2059	B C 6M
R2060	B C 6M
R2201	B C 16N
R2202	B C 16N
R2203	B C 16N
R2204	B C 16N
R2205	B C 16M
R2206	B C 16M
R2207	B C 16M
R2208	B C 16M
R2209	B C 19L
R2210	B C 19L
R2211	B C 19L
R2212	B C 19M
R2213	B C 19L
R2214	B C 19M
R2215	A D 18M
R2216	B C 19M
R2217	B C 18M
R2218	B C 17M
R2219	B C 17M
R2220	B C 16J
R2222	B C 15M
R2223	B C 16M
R2224	B C 17K
R2225	B C 17K
R2226	B C 16N
R2227	B C 16N
R2228	B C 16N
R2229	B C 16N
R2230	B C 17N
R2231	B C 17N
R2232	B C 17N
R2233	B C 16N
R2234	B C 18M
R2235	B C 18N
R2236	B C 18N
R2237	B C 17O
R2238	B C 17N
R2239	B C 18J
R2240	B C 18J
R2251	B C 16J
R2252	B C 16J
R2253	B C 17J
R2255	B C 17K
R2257	B C 17J
R3004	B C 14C
R3005	B C 12B
R3013	B C 14C
R3014	B C 13C
R3017	B C 13C
R3018	B C 13C
R3021	B C 13C
R3025	B C 13D
R3026	B C 16D
R3027	B C 14D
R3028	B C 14E
R3030	B C 15F
R3031	B C 13E
R3032	B C 14E
R3035	B C 14E
R3042	B C 14E
R3044	B C 14G
R3058	B C 10F
R3059	B C 10F
R3063	B C 10E
R3064	B C 10F
R3078	B C 10D
R3079	B C 10D
R3080	B C 10D
R3081	B C 10D
R3083	B C 10D
R3084	B C 10D
R3085	B C 10D
R3086	B C 10C
R3087	B C 10C
R3088	B C 10C
R3089	B C 10C
R3090	B C 10C
R3091	B C 10C
R3092	B C 10C
R3093	B C 10C
R3094	B C 10C
R3114	B C 6C
R3131	B C 10F
R3133	B C 9F
R3134	B C 10F
R3135	B C 9F
R3136	B C 10F
R3138	B C 9F
R3139	B C 10F
R3140	B C 9F
R3205	B C 7G
R3206	B C 7F
R3207	B C 7G
R3208	B C 7G
R3209	B C 11H
R3210	B C 6B
R3211	B C 7D
R3212	B C 15E
R3213	B C 15F
R3214	B C 8F
R3215	B C 8F
R3216	B C 6D
R3217	B C 6C
R3219	A D 17C
R3220	B C 13D
R3222	B C 13D
R3223	B C 13F
R3224	B C 13E
R3225	B C 13F
R3226	B C 17D
R3227	B C 17E
R3228	B C 7C
R3232	B C 6C
R3233	B C 6C
R3234	B C 6D
R3236	B C 16C
R3237	B C 16D
R3238	B C 16D
R3242	B C 15E
R3243	B C 14C
R3244	B C 14C
R3245	B C 14D
R3252	A D 5L
R3253	A D 6L
R3254	B C 9F
R3255	B C 9F
R4001	B C 14E
R4002	B C 15E
R4003	B C 10E
R4004	B C 13D
R4010	B C 10D
R4011	B C 10E
R4012	B C 9D
R4018	B C 10E
R4019	B C 10E
R4021	B C 10E
R4022	B C 5C
R4024	A D 8F
R4025	B C 15E
R4026	B C 4B
R4027	B C 2C
R5001	A D 3O
R5101	A D 3M
R5102	A D 4M
R5103	A D 3L
R5104	A D 1M
R5105	A D 3L
R5106	A D 3L
R5107	A D 2J
R5108	B C 3K
R5109	B C 3K
R5110	B C 3K
R5111	B C 3K
R5112	B C 3K
R5113	B C 3L
R5302	B C 3E
R5303	B C 2E
R5304	B C 3G
R5305	B C 1E
R5306	B C 1E
R5310	B C 3F
R5312	B C 3F
R5313	B C 3F
R5317	B C 3G
R5319	B C 1D
R5320	B C 3E
R5321	B C 2E
R5331	A D 2G
R5332	A D 3D
R5333	A D 3E
R5334	B C 4F
R6020	B C 21N
R6021	B C 21N
R6030	B C 20J
R6031	B C 21K
R6032	B C 21J
R6033	B C 21J
R6050	B C 21O
R6051	B C 21O
R6052	B C 21O
R6054	B C 21O
R6056	B C 21P
R6502	B C 18L
R6701	B C 21H
R6702	B C 21H
R6703	B C 21H
R6704	B C 21G
R6705	B C 20H
R6706	B C 21H
R6707	B C 20F
R6708	B C 19G
R6709	B C 19G
R6710	B C 19G
R6711	A D 19F
R6712	B C 19E
R6713	B C 18E
R6714	B C 19E
R6715	B C 19D
R6716	A D 20D
R6719	B C 20G
R6720	A D 19D
R6721	B C 20E
R7001	B C 11B
R7002	B C 12A
R7003	B C 12A
R7004	B C 12A
R7005	B C 13A
R7006	B C 13A
R7007	B C 13A
R7015	B C 8A
R7020	B C 16A
R7021	B C 15A
R7022	B C 7A
R7023	B C 4A
R7030	B C 16A
R7031	B C 17A
R7032	B C 5A
R7033	B C 3A
R7034	B C 3A
R7040	B C 16B
R7071	B C 17A
R7101	B C 17F
R7102	B C 17E
R7103	B C 17F
R7104	B C 17E
R7105	B C 12P
R7107	B C 13P
R7108	B C 20M
R7109	A D 20N
R7110	B C 13O
R7111	B C 12O
R7112	B C 10P
R7113	B C 14P
R7114	B C 16P
R7115	A D 9O
R7116	B C 16P
R7117	B C 14P
R7118	B C 20N
R7119	B C 17P
R7120	B C 17O
R7121	B C 20P
R7122	B C 20O
R7123	B C 19O
R7133	B C 6O
R7141	B C 10O
R7151	B C 19P
R7152	B C 19P
R7153	B C 19P
R7160	B C 18B
R7161	B C 19A
R7162	B C 19A
R7163	B C 21B
OTHER	
CP3001	A D 4H
CP3002	B C 4H
CP4001	A D 4F
CP4002	B C 4F
DI7001	A D 11A
F5001	A D 2N
FC5001	A D 2O
FC5002	A D 2N
J7101	A D 15P
J7102	A D 11P
J7103	A D 20Q
J7105	A D 19A
JS3001	A D 7G
K2001	B C 14O
K2002	B C 14N
K2003	B C 8O
K2004	B C 8O
K2251	B C 15L
K2252	B C 15L
K2253	B C 15L
K5101	A D 2K
K5102	A D 1M
K6701	B C 20F
K6702	B C 21F
K6703	B C 19G
K6704	B C 19G
K6705	B C 19F
K6706	B C 20D
K6707	B C 21E
LF5002	A D 3N
PC0932	B C 3P
PC01402	A D 2L
PC01907	A D 15L
PC3001	A D 15F
PC3002	A D 9F
PC5101	A D 4K
S3001	A D 17C
S7002	A D 17B
S7003	A D 16B
S7004	A D 6B
S7006	A D 5B
S7008	A D 5B
S7010	A D 4B
S7011	A D 3B
S7012	A D 2B
S7013	A D 2B
S7014	A D 1B
S7016	A D 16B
S7017	A D 15B
S7018	A D 8B
T2051	A D 6N
T5001	A D 3H
TP106	A D 20C
TP111	A D 20C
TP2253	A D 21C
TP4001	A D 20C
TU6001	A D 22P
VA5001	A D 2O
VA5003	A D 4P
VR4028	A D 2C
X1	A D 14L
X2	A D 14K
X3001	A D 13E
X3002	A D 13F
X6701	A D 20F

■ VOLTAGE CHARTS

<MAIN>

MODE PIN NO.	REC	PLAY
IC1		
1	0	0
2	0	0
3	0	0
4	4.4	4.4
5	2.0	2.1
6	2.5	2.5
7	2.8	2.8
8	1.8	1.3
9	1.8	1.3
10	2.3	1.9
11	2.6	3.0
12	1.5	0.6
13	0	0
14	2.7	2.4
15	2.8	2.8
16	0	2.9
17	2.7	2.7
18	1.9	1.9
19	2.8	2.8
20	0	0
21	2.8	2.8
22	5.0	5.1
23	2.3	2.3
24	0	0.2
25	0	0
26	0	2.8
27	0	0.1
28	0	0
29	2.4	2.3
30	2.8	2.9
31	0	0.3
32	2.3	2.3
33	2.0	2.1
34	1.8	1.7
35	3.0	3.0
36	2.3	2.3
37	3.0	3.0
38	2.1	0
39	1.4	1.4
40	2.0	0.1
41	2.7	2.5
42	1.9	2.0
43	2.1	2.1
44	0	0
45	3.2	3.2
46	3.2	3.2
47	0	5.1
48	0	0
49	3.3	3.3
50	5.1	5.1
51	2.1	2.0
52	5.1	5.1
53	2.6	2.6
54	0	0
55	1.9	2.0
56	0	0
57	2.1	2.1
58	0	2.3
59	5.0	5.1
60	5.0	5.1
61	0	0
62	2.2	2.2
63	2.2	2.2
64	2.6	2.6
65	2.2	2.2
66	2.6	2.6
67	0.1	0.1
68	1.2	1.2
69	1.9	1.9
70	2.7	1.0
71	2.2	2.1
72	0	0
73	4.5	4.5
74	4.8	4.6
75	2.7	2.7
76	2.2	0
77	2.8	2.8
78	0	0
79	0.5	0
80	2.5	2.5
81	5.0	0
82	0	0
83	0	0
84	5.0	0
85	2.4	2.3
86	2.4	0
87	0	2.3
88	0	0
89	0	0
90	0	0
91	0	0
92	5.0	0
93	0	0.1
94	0.1	0.1
95	0	0
96	2.5	2.5
97	0	0
98	2.2	2.5
99	0	0
100	2.5	2.5
IC2201		
1	2.4	2.4
2	0	0
3	2.4	2.4
4	0	0
5	0	0
6	0	2.5
7	0	2.1
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	2.5	2.5
17	0.5	0.5
18	2.5	2.5
19	2.5	2.5
20	0	0.6
21	2.5	0
22	2.6	0.7
23	0	0
24	2.6	0.6
25	5.0	5.1
26	2.6	0
27	0	2.6
28	4.3	2.5
29	3.9	1.8
30	3.7	1.7
31	0.9	0
32	2.5	2.5
33	2.5	2.6
34	0	0.6
35	2.5	2.5
36	0	0
37	1.7	1.7
38	0	0
39	0	0
40	5.1	0
41	0	0
42	4.4	4.4
43	4.3	4.4
44	3.3	3.3
45	0	0
46	4.9	4.9
47	2.5	2.6
48	2.5	2.5
49	0.2	0.2
50	0.2	0.2
51	0	0
52	0	0
53	4.5	4.6
54	0	0
55	0	0
56	0	0
57	4.6	4.6
58	8.4	8.3
59	4.6	4.6
60	0.1	0.3
61	2.6	0
62	2.4	0
63	4.6	4.6
64	4.7	4.7
IC3001		
1	-	-
2	-	-
3	5.0	4.9
4	4.2	4.3
5	4.9	4.9
6	0.9	0
7	0.9	0.9
8	0	0.9
9	0.9	0
10	1.8	0
11	0	0
12	0.8	4.5
13	0	0
14	0	0
15	0	0
16	0	0
17	4.8	4.6
18	4.6	4.6
19	0	0
20	4.4	0
21	0	0
22	5.0	4.9
23	2.4	2.5
24	0	0
25	4.9	4.9
26	0	2.4
27	4.8	0
28	4.5	0
29	0	0
30	0	0
31	4.2	4.2
32	4.4	4.4
33	2.6	2.6
34	2.5	2.5
35	0	3.0
36	4.8	4.9
37	2.3	2.4
38	0	2.3
39	0	0
40	2.0	2.0
41	0	2.4
42	0	0
43	0	0
44	0	4.6
45	0	0
46	0	0
47	1.8	1.7
48	0	0
49	1.7	1.7
50	0	2.5
51	5.1	5.1
52	2.6	2.6
53	2.5	2.5
54	2.5	2.5
55	2.2	2.1
56	4.9	4.9
57	4.7	4.7
58	4.8	0
59	4.7	4.7
60	0	0
61	2.5	2.4
62	0	0
63	0	0
64	0	0
65	1.4	1.3
66	0	0
67	2.3	2.3
68	2.3	2.4
69	2.5	2.4
70	2.4	2.4
71	0	0
72	2.4	2.4
73	4.9	4.9
74	3.0	2.4
75	2.0	2.5
76	2.5	2.5
77	4.3	0
78	4.5	4.4
79	2.5	2.5
80	0	4.8
81	4.3	2.5
82	0	0
83	0	2.1
84	0	0
85	4.8	4.8
86	0	0
87	0	0
88	5.0	5.0
89	5.0	4.9
90	0	0
91	0	0
92	0	4.9
93	0	0
94	5.0	4.9
95	3.9	3.9
96	3.9	3.9
97	3.9	3.9
98	3.9	0
99	0	3.9
100	0	0
IC3002		
1	4.8	4.9
2	4.8	4.8
3	0	0
4	0	0
IC3003		
1	0	40
2	0	0
3	0	0
4	0	0
5	4.3	4.3
6	4.4	4.3
7	0	0
8	4.9	4.9
IC6701		
1	5.0	5.0
2	1.5	0
3	1.5	1.5
4	0	0
5	2.5	2.5
6	2.4	2.4
7	0.1	0.1
8	0	0
9	0	0
10	3.6	3.7
11	3.7	3.7
12	4.4	4.3
13	4.3	4.2
14	0.1	0.2
15	0	0.2
16	0	0.1
17	0	0.1
18	0	0.1
19	5.1	5.1
20	0	0
21	0	0.1
22	4.3	4.4
23	0	0
24	0	0
25	0	0
26	1.0	1.0
27	1.0	1.0
28	0	0
29	0	0
30	2.3	2.4
31	2.3	2.3
32	0	0
33	4.6	4.7
34	3.1	3.1
35	0	0
36	2.3	2.3
37	0	0
38	0	0
39	0	0
40	2.3	2.3
41	2.3	2.3
42	2.6	2.6
43	2.3	2.3
44	0	0
IC7002		
1	4.9	4.9
2	4.9	4.9
3	0	0
Q2		
E	1.8	1.7
C	5.0	5.1
B	2.4	2.4
Q7		
E	2.4	2.3
C	2.4	2.3
B	0	0
Q8		
E	2.4	2.3
C	2.3	2.2
B	0	0
Q9		
E	0	0
C	0	0
B	0	0.7
Q10		
E	0	0
C	0	0
B	0.7	0.7
Q12		
E	2.9	2.9
C	0	0
B	2.2	2.2
Q202		
E	1.8	1.7
C	0.4	0.4
B	0	0
Q2001		
E	-8.8	0
C	0	0
B	-17.0	0.7
Q2002		
E	0	0
C	0	0
B	-16.7	0.7
Q2003		
E	5.1	5.2
C	-16.8	5.0
B	4.8	0
Q2051		
E	0	0
C	7.4	0.1
B	0.4	0.1
Q2052		
E	0	10.6
C	10.4	0.1
B	9.8	10.5
Q2053		
E	0	0
C	0	10.5
B	4.8	0
Q2054		
E	10.4	0.1
C	10.2	0.2
B	9.6	0.1
Q2055		
E	0	0
C	0	0.1
B	4.8	0
Q2201		
E	5.0	4.9
C	0	0
B	4.9	4.9
Q2202		
E	0	0
C	4.9	4.9
B	0	0
Q2203		
E	0	0
C	0	0
B	0	0
Q2204		
E	0	0
C	0	0
B	0	0
Q2255		
E	0	0
C	0	0
B	0	4.7
Q3001		
E	0	0
C	4.5	4.4
Q3002		
E	0	0
C	4.6	4.8
Q3004		
E	0	0
C	0	0
B	0.7	0.7
Q3005		
E	0	0
C	4.7	4.7
B	0	0
Q4001		
E	0	0
C	0	0
B	4.7	4.7
Q4002		
E	4.9	5.0
C	5.6	5.6
B	5.6	5.6
Q4004		
E	0	0
C	0	0
B	5.0	5.0
Q5101		
S	-139.4	-139.7
G	-136..8	-136.3
D	140.5	140.7
Q5102		
E	-140.1	-139.3
C	-136.4	-136.7
B	-139.6	-139.0
Q5301		
E	0	0
C	4.3	4.3
B	0.5	0.6
Q5304		
E	10.6	10.6
C	11.7	11.7
B	11.2	11.2
Q5305		
E	11.2	11.2
C	11.2	11.2
B	0	0
Q5306		
E	0	0
C	0	0
B	4.7	0
Q5307		
E	5.0	5.0
C	5.6	5.6
B	5.6	5.6
Q5309		
E	45.5	45.3
C	45.5	45.3
B	0	0
Q5310		
E	27.5	27.5
C	27.6	27.5
B	28.1	28.0
Q5321		
E	5.1	5.1
C	5.6	5.6
B	5.9	5.9
Q6030		
E	4.5	0
C	0	0
B	3.9	3.9
Q6031		
E	0	0
C	4.5	0
B	0	4.6
Q6032		
E	0	0
C	0	0
B	0	4.6
Q7001		
E	5.0	5.0
C	2.2	1.7
B	3.9	3.9
Q7002		
E	5.0	4.9
C	2.1	1.7
B	3.9	3.9
Q7003		
E	5.0	4.9
C	2.2	1.7
B	3.9	3.9
Q7004		
E	5.0	4.9
C	2.0	1.7
B	3.9	3.9
Q7005		
E	5.0	4.9
C	1.5	1.7
B	3.9	3.9
Q7006		
E	0	0
C	2.8	3.4
B	0.9	0
Q7007		
E	0	0
C	2.8	2.7
B	0.9	0.9
Q7008		
E	0	0
C	3.4	2.7
B	0	0.8
Q7009		
E	0	0
C	2.8	3.4
B	0.9	0
Q7010		
E	0	0
C	2.1	3.4
B	1.8	0
Q7011		
E	0	0
C	3.4	3.4
B	0	0
Q7012		
E	0	0
C	2.7	0
B	0.9	4.5
Q7101		
E	0	0
C	0	10.6
B	0.7	0
Q7102		
E	0	9.9
C	0	10.6
B	0	10.6
Q7104		
E	2.5	2.5
C	0	0
B	1.7	1.7
TU6001		
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	-	-
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-
21	-	-
22	-	-
23	-	-
24	-	-
25	-	-
26	4.9	4.9
27	0	0
28	4.2	4.0
29	4.9	4.9
30	4.3	3.5
31	2.3	2.2
32	31.1	31.2
33	2.3	2.3
34	0	0
35	0	0
36	4.4	4.2
37	4.2	4.2
38	-	-
39	5.0	5.0
40	0	0
41	31.1	31.2
42	0	0
43	0	0
44	4.2	4.2
45	0	0
46	2.4	2.4
47	0	0
48	2.5	2.6
49	3.9	3.9
CN1		
1	0	0
2	0	0
3	0	0
4	2.4	2.3
5	2.4	2.3
6	2.4	2.3
7	2.5	0
8	2.5	0
9	2.5	0
CN2001		
1	0	0
2	0	0
3	0	0
4	0	0
5	2.4	2.5
6	2.6	2.4
CN2002		
1	0	0
2	0	0
CN3001		
1	2.3	2.3
2	27.5	27.4
3	5.1	5.1
4	0	0
5	9.2	9.3
6	0	0
7	0	0
8	10.9	10.9
9	2.5	2.6
10	2.5	2.5
11	1.4	1.3
12	2.6	2.5
CN3010		
1	0	0
2	4.9	4.8
3	4.8	0
4	0	0
5	0	0
6	0	0
7	4.9	4.9
8	4.9	4.7

■ CPU PIN FUNCTION

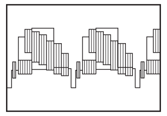
<SYSCON IC3001>

PIN NO.	LABEL	IN/OUT	FUNCTION
1	SP_FG	IN	DETECTION SIGNAL FOR SUPPLY REEL ROTATION/TAPE REMAIN
2	TU_FG	IN	DETECTION SIGNAL FOR TAKE-UP REEL ROTATION/TAPE REMAIN
3	P50_IN	IN	CONTROL SIGNAL FOR TV LINK
4	SW1/KEY3	OUT	TUNER SYSTEM MODE:H/
5	RC	IN	REMOTE CONTROL DATA INPUT
6	D_A	OUT	LED DRIVE
7	D_B	OUT	LED DRIVE
8	D_C	OUT	LED DRIVE
9	D_D	OUT	LED DRIVE
10	D_E	OUT	LED DRIVE
11	D_F	OUT	LED DRIVE
12	D_G	OUT	LED DRIVE
13	P50_OUT	OUT	CONTROL SIGNAL FOR TV LINK
14	SECAM[H]/R-Y_REV	IN	SECAN MODE :H/
15	NREC[H]	OUT	NORMAL AUDIO REC MODE CONTROL SIGNAL (REC:H)
16	P.ON_P	OUT	P.ON_PULSE(H)
17	12C_DATA_A/V	IN/OUT	SERIAL DATA TRANSFER CLOCK FOR THE VIDEO /AUDIO IC
18	12C_CLK_A/V	OUT	SERIAL DATA TRANSFER OUTPUT FOR THE VIDEO /AUDIO IC
19	SP_SHORT[H]	OUT	MODE SELECT
20	LP/EP_SHOR[H]	OUT	MODE SELECT
21	A.MUTE[H]/SB_GAIN	OUT	AUDIO MUTE CONTROL (MUTE ON:H)/VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE
22	REC_SAFETY	IN	REC SAFETY SWITCH DETECT (SW ON:L)
23	D.FF	OUT	ROTATION DETECTION SIGNAL FOR DRUM MOTOR/ TIMING CONTROL SIGNAL FOR REC
24	V.PULSE	OUT	V.PULSE ADDITION TIMING CONTROL
25	RESET	-	RESET TERMINAL (RESET ON:L)
26	A.FF	OUT	AUDIO FF OUTPUT
27	N.REC_ST[H]	OUT	NORMAL AUDIO SOUND RECORDING START
28	H.REC_ST[H]	OUT	NORMAL AUDIO SOUND RECORDING START
29	TV[L]	OUT	NC
30	S_DET	IN	S-VHS DETECT (DETECT ON : H)
31	12C_DATA	IN/OUT	SERIAL DATA TRANSFER OUTPUT FOR MEMORY IC
32	12C_CLK/TEST	OUT	SERIAL DATA TRANSFER CLOCK FOR MEMORY IC
33	CAP_CTL_V	OUT	CAPSTAN MOTOR CONTROL
34	DRUM_CTL_V	OUT	DRUM MOTOR CONTROL
35	SB_GAIN/A.MUTE[H]	OUT	VOLTAGE CONTROL SIGNAL FOR VIDEO FREQUENCY RESPONSE/ AUDIO MUTE CONTROL(MUTE ON:H)
36	VDD	-	SYSTEM POWER
37	X_OUT	-	MAIN SYSTEM CLOCK (14MHz)
38	X_IN	-	MAIN SYSTEM CLOCK (14MHz)
39	VSS	-	GND
40	XC_IN	-	TIMER CLOCK(32KHz)
41	XC_OUT	-	TIMER CLOCK(32KHz)
42	CLK_SEL	IN	CLOCK SELECT FOR FLASH WRITER
43	CH_SW/SW2	IN	TUNER SYSTEM MODE:L /CHANNEL SWITCHING SIGNAL
44	TU_MUTE[H]	OUT	TUNER VIDEO CONTROL (MUTE:H)
45	OSD.S_IMPOSE	OUT	SIGNAL IMPOSE FOR OSD SCREEN
46	CONV_CTL[H]	OUT	R/F CONVERTER ON/OFF CONTROL
47	VIDEO_OSD_OUT	OUT	COMPOSITE VIDEO SIGNAL OUTPUT
48	VSS2	-	GND
49	V_TO_OSD	IN	COMPOSITE VIDEO SIGNAL INPUT
50	SYN_IN	IN	COMPOSITE SYNC/HORIZONTAL SYNC
51	VDD2	-	SYSTEM POWER
52	AFCC	OUT	AFC CLOCK (SYNC SEPARATOR FOR OSD / EXTERNAL CIRCUIT FOR AFC)
53	AFCLPF	IN	FILTER OUTPUT FOR HORIZONTAL SYNCHRONIZING OF OSD CHARACTER
54	FSCI	IN	FSC INPUT FOR OSD
55	FSCLPF	IN/OUT	FILTER OUTPUT FOR FSC OF OSD CHARACTER
56	HS_FR	OUT	HIGH SPEED FF/REW CONTROL
57	CTL_GAIN	OUT	CONTROL AMP OUT FREQUENCY RESPONSE SWITCHING
58	4:3[L]	OUT	ASPECT SELECT
59	P.CTL[H]	OUT	CONTROL SIGNAL FOR SWITCHING POWER SUPPLY
60	EE[L]/MODEL_OPTION2	OUT	EE MODE : L/
61	LM_F/R/S	OUT	LOADING MOTOR DRIVE
62	CAP.M_F/R	OUT	CAPSTAN MOTOR REVERSE CONTROL (FWD:L/REV:H)
63	CH+A/MODEL_OPTION2	OUT	AV1 OUTPUT SWITCH CONTROL
64	CH+B/MODEL_OPTION3	OUT	AV2 OUTPUT SWITCH CONTROL
65	D.FG_IN	IN	DRUM FG PULSE INPUT
66	EEPROM_DET/SUB_CLK_DET	-	SETTING OF EEPROM (ENABLE:L,DISABLE:H) /
67	C.FG_AMP_OUT	OUT	CAPSTAN FG PULSE AMO OUT
68	C.FG_IN	IN	CAPSTAN FG PULSE INPUT
69	AMP_VREF_OUT	OUT	CTL PULSE AMP REFFERENCE VOLTAGE OUTPUT
70	AMP_VREF_IN	IN	CTL PULSE AMP REFFERENCE VOLTAGE INPUT
71	AVSS	-	GND
72	AMP_C	-	CAPACITO CONNECT TERMINAL FOR CTL PULSE AMP CIRCUIT
73	AVCC	IN/OUT	SYSTEM POWER
74	CTL[+]	-	CTL(+) SIGNAL
75	CTL[-]	IN/O UT	CTL(-) SIGNAL
76	CTL_AMP_OUT	OUT	CTL PULSE OUTPUT
77	PROTECT	IN	DETECTION SIG
79	AFC/JUST_CLK	IN	TUNING CHECK/JUST CLK INPUT
80	LED/PAL_PB[H]	IN	NC / PAL PLAYBACK MODE:H
81	A.ENV/ND[L]	IN	AUDIO PB FM ENV.INPUT/NON HiFi MODE:L
82	RF_AGC	IN	CHANGES IN ATS+IC OUTPUT AS CAUSED BY CHANGES IN RECEIVER SENSITIVITY WHEN THE SAME CHANNEL IS RECEIVED MORE THAN ONCE ARE INPUT.
83	VIDEO_ENV	IN	AUTO TRACKING DETECT/INPUT THE AVERAGE OF PLAYBACK VIDEO SIGNAL
84	MESEC_DET/SW_P_ADJ	OUT	MESECAM:H/
85	END_SENSOR	IN	END SENSOR
86	SECAN_DET/KILLER_DET	IN	SECAM MODE DETECT/COLOR SIGNAL DISTINCTION
87	SCR[H]	IN	SCRAMBLE CONTROL INPUT (SCRAMBLE:H)
88	KEY1	IN	OPERATION CONTROL SIGNAL
89	KEY2	IN	OPERATION CONTROL SIGNAL
90	POWER_DET	IN	DETECTION SIGNAL FOR POWER DOWN OF AC POWER SUPPLY
91	LSA	IN	MECHANISM MODE DETECT (A)
92	LSB	IN	MECHANISM MODE DETECT (B)
93	LSC	IN	MECHANISM MODE DETECT(C)
94	LSD	IN	MECHANISM MODE DETECT (D)
95	DIG1	OUT	LED DRIVE
96	DIG2	OUT	LED DRIVE
97	DIG3	OUT	LED DRIVE
98	DIG4	OUT	LED DRIVE
99	DIG5	OUT	LED DRIVE
100	NC	IN/OUT	NOT USED

■ WAVEFORMS

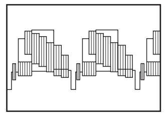
<VIDEO/N.AUDIO>

WF1 IC1-21



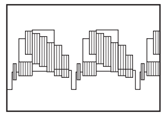
REC 1.0Vp-p
0.2V/20μsec/DIV

WF2 IC1-26



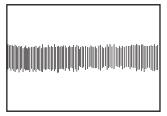
REC 0.5Vp-p
0.1V/20μsec/DIV

WF3 IC1-29



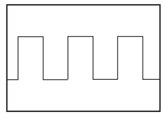
PB 2.2Vp-p
0.5V/20μsec/DIV

WF4 TP106 PB.FM



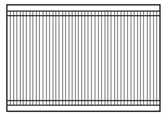
PB 0.3Vp-p
0.1V/20μsec/DIV

WF5 TP111 D.FF



REC/PB 3.8Vp-p
1V/10msec/DIV

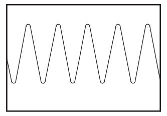
WF6 IC1-86



REC 1.3Vp-p
0.2V/20μsec/DIV

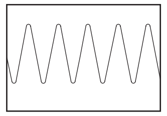
<AUDIO>

WF1 IC2201-9



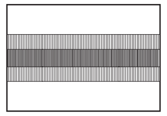
PB/REC 33mVp-p
10mV/0.5msec/DIV

WF2 IC2201-53



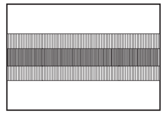
REC/PB 0.35Vp-p
0.1V/5msec/DIV

WF3 IC2201-21



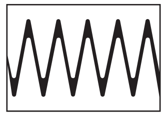
REC 1.2Vp-p
0.5V/5μsec/DIV

WF4 TP2253 A.PB.FM



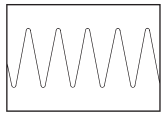
PB 0.6Vp-p
0.2V/5μsec/DIV

WF5 IC1-6



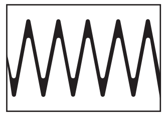
REC 0.33Vp-p
PB 0.52Vp-p
0.1V/0.5ms/DIV

WF6 IC1-2



REC/PB 28mVp-p
10mV/0.5ms/DIV

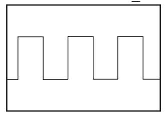
WF7 IC1-98



REC 0.45Vp-p
0.1V/0.5ms/DIV

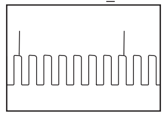
<SYSTEM CONTROL>

WF1 CN3001-1 CAP.M_FG



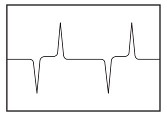
REC/PB 4.4Vp-p
2V/0.5msec/DIV

WF2 CN3001-11 DRUM_PG/FG



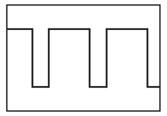
REC/PB 4.8Vp-p
1V/5msec/DIV

WF3 TP4001 CTL.P



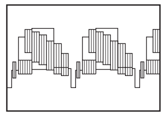
PB 4.0Vp-p
1V/5msec/DIV

WF4 IC3001-74



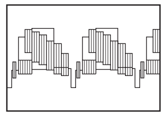
REC 3.9Vp-p
1V/10msec/DIV

WF5 IC3001-49



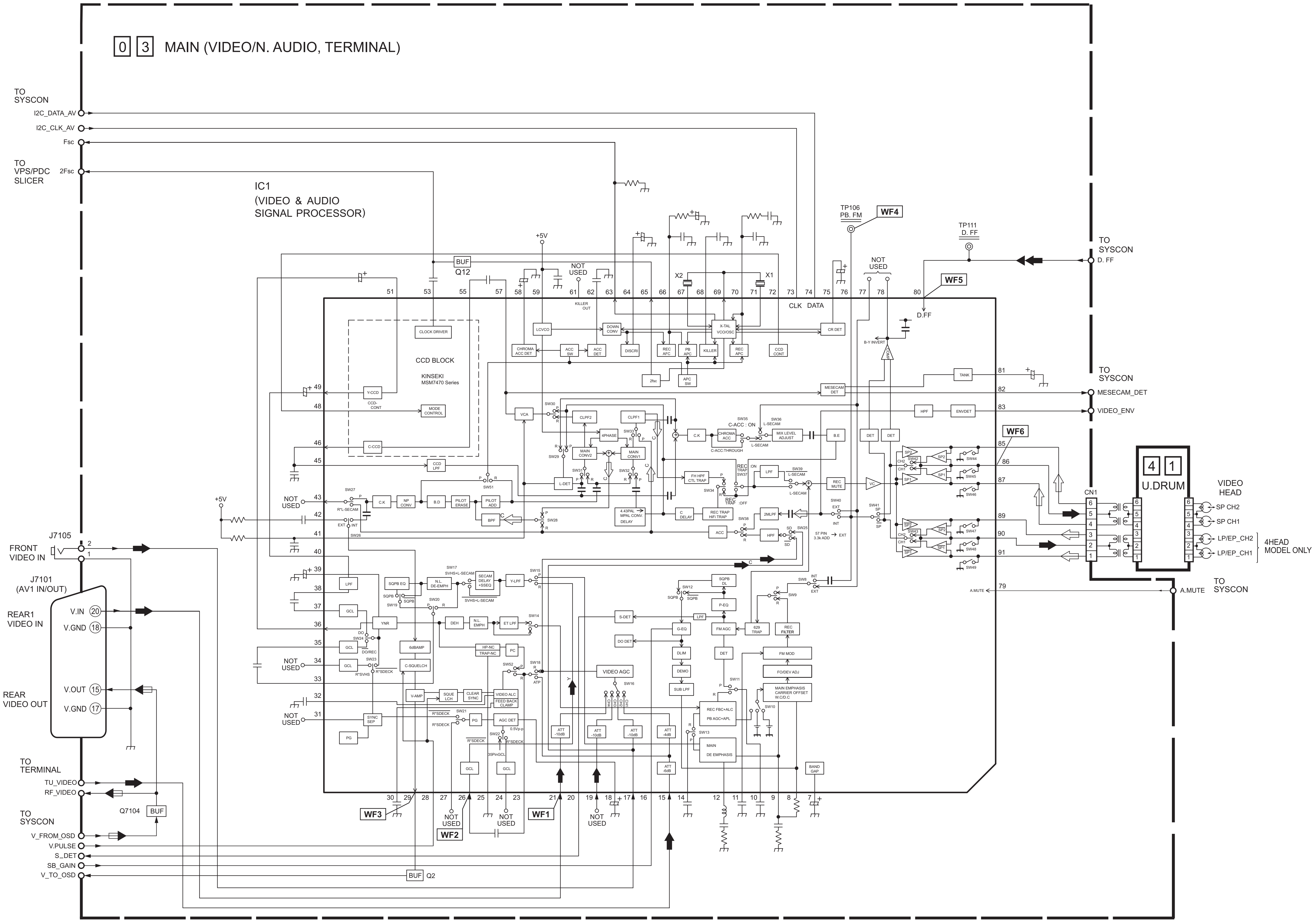
REC/PB 2.2Vp-p
0.5V/20μsec/DIV

WF6 IC3001-47

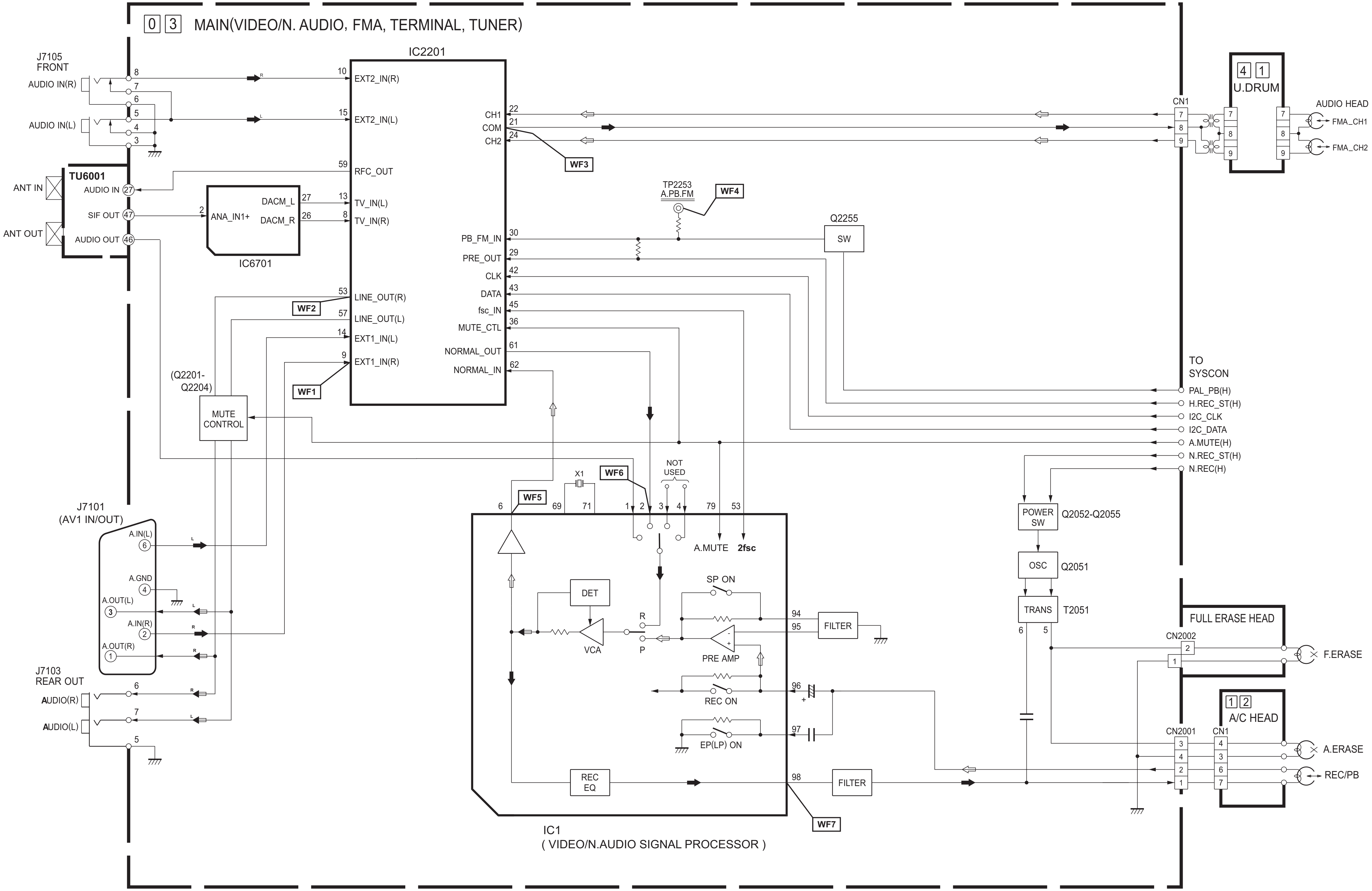


REC/PB 2.2Vp-p
0.5V/20μsec/DIV

■ VIDEO/N.AUDIO BLOCK DIAGRAM

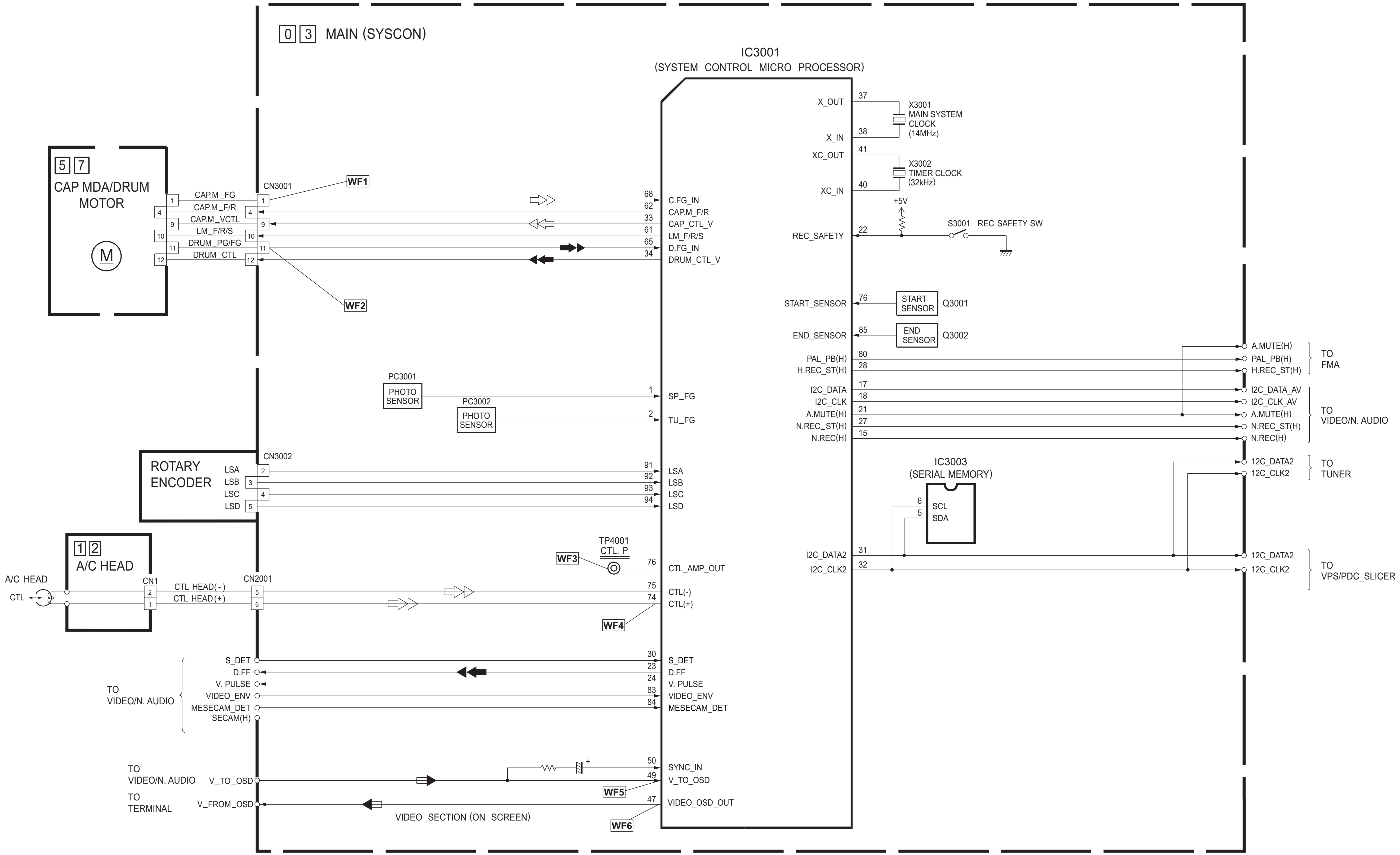

0 3 MAIN (VIDEO/N. AUDIO, TERMINAL)
TO SYSCON
I2C_DATA_AV
I2C_CLK_AV
Fsc
TO VPS/PDC SLICER
2Fsc
IC1
(VIDEO & AUDIO SIGNAL PROCESSOR)
BUF
Q12
+5V
NOT USED
X2
X1
TP106
PB. FM
WF4
TP111
D. FF
NOT USED
TO SYSCON
D. FF
WF5
D.FF
CLK DATA
CLOCK DRIVER
CCD BLOCK
KINSEKI
MSM7470 Series
Y-CCD
CCD-CONT
MODE CONTROL
C-CCD
CCD LPF
LCVCO
DOWN CONV
X-TAL VCO/OSC
CR DET
CHROMA ACC DET
ACC SW
ACC DET
DISCRI
REC AFC
PB APC
KILLER
REC APC
CCD CONT
KILLER OUT
2fsc
APC SW
B-Y INVERT
TANK
MESECAM DET
HPF
ENVDET
TO SYSCON
MESECAM_DET
VIDEO_ENV
WF6
VCA
CLPF2
CLPF1
4PHASE
MAIN CONV2
MAIN CONV1
L-DET
C.K
CHROMA ACC
C-ACC : ON
C-ACC:THROUGH
L-SECAM
MIX LEVEL ADJUST
B.E
DET
FH HPF CTL TRAP
REC TRAP
LPF
REC MUTE
VC
NOT USED
C.K
NP CONV
B.D
PILOT ERASE
PILOT ADD
BPF
4.43PAL MPAL CONV. DELAY
C DELAY
REC TRAP HiFi TRAP
2MLPF
ACC
HPF
57 PIN 3.3k ADD
INT
EXT
SP
CH2
CH1
SP1
SP2
U.DRUM
4 1
CN1
VIDEO HEAD
SP CH2
SP CH1
LP/EP_CH2
LP/EP_CH1
4HEAD MODEL ONLY
TO SYSCON
A.MUTE
J7105
FRONT VIDEO IN
J7101 (AV1 IN/OUT)
REAR1 VIDEO IN
V.IN 20
V.GND 18
REAR VIDEO OUT
V.OUT 15
V.GND 17
+5V
LPF
SQPB EQ
N.L. DE-EMPH
SECAM DELAY +SSEQ
Y-LPF
GCL
YNR
DEH
N.L. EMPH
ET LPF
6dBAMP
HP-NC TRAP-NC
PC
C-SQUELCH
GCL
V-AMP
SQUE LCH
CLEAR SYNC
VIDEO ALC
FEED BACK CLAMP
SYNC SEP
PG
AGC DET
GCL
GCL
VIDEO AGC
S-DET
DO DET
SQPB DL
P-EQ
LPF
G-EQ
FM AGC
629 TRAP
REC FILTER
DLIM
DET
FM MOD
DEMO
FO/DEV ADJ
SUB LPF
MAIN EMPHASIS CARRIER OFFSET W.C/D.C
REC FBC+ALC
PB AGC+APL
MAIN DE EMPHASIS
ATT -10dB
ATT -4dB
ATT -6dB
BAND GAP
WF3
WF2
WF1
NOT USED
TO TERMINAL
TU_VIDEO
RF_VIDEO
Q7104
BUF
TO SYSCON
V_FROM_OSD
V.PULSE
S_DET
SB_GAIN
V_TO_OSD
BUF
Q2

■ AUDIO BLOCK DIAGRAM



0 3 MAIN(VIDEO/N. AUDIO, FMA, TERMINAL, TUNER)
IC2201
J7105
FRONT
AUDIO IN(R)
AUDIO IN(L)
EXT2_IN(R)
EXT2_IN(L)
RFC_OUT
TV_IN(L)
TV_IN(R)
CH1
COM
CH2
WF3
TP2253
A.PB.FM
WF4
Q2255
SW
PB_FM_IN
PRE_OUT
CLK
DATA
fsc_IN
MUTE_CTL
NORMAL_OUT
NORMAL_IN
LINE_OUT(R)
LINE_OUT(L)
EXT1_IN(L)
EXT1_IN(R)
WF2
WF1
TU6001
ANT IN
ANT OUT
AUDIO IN
SIF OUT
AUDIO OUT
ANA_IN1+
DACM_L
DACM_R
IC6701
(Q2201-
Q2204)
MUTE
CONTROL
4 1
U.DRUM
CN1
AUDIO HEAD
FMA_CH1
FMA_CH2
TO
SYSCON
PAL_PB(H)
H.REC_ST(H)
I2C_CLK
I2C_DATA
A.MUTE(H)
N.REC_ST(H)
N.REC(H)
J7101
(AV1 IN/OUT)
A.IN(L)
A.GND
A.OUT(L)
A.IN(R)
A.OUT(R)
J7103
REAR OUT
AUDIO(R)
AUDIO(L)
X1
WF6
NOT
USED
WF5
A.MUTE
2fsc
DET
SP ON
R
P
VCA
PRE AMP
REC ON
EP(LP) ON
FILTER
REC
EQ
FILTER
WF7
IC1
(VIDEO/N.AUDIO SIGNAL PROCESSOR)
POWER
SW
Q2052-Q2055
OSC
Q2051
TRANS
T2051
FULL ERASE HEAD
CN2002
F.ERASE
1 2
A/C HEAD
CN2001
CN1
A.ERASE
REC/PB

■ SYSTEM CONTROL BLOCK DIAGRAM



03 MAIN (SYSCON)
IC3001
(SYSTEM CONTROL MICRO PROCESSOR)
X_OUT 37
X_IN 38
XC_OUT 41
XC_IN 40
X3001 MAIN SYSTEM CLOCK (14MHz)
X3002 TIMER CLOCK (32kHz)
+5V
S3001 REC SAFETY SW
REC_SAFETY 22
START_SENSOR 76
START SENSOR Q3001
END_SENSOR 85
END SENSOR Q3002
57
CAP MDA/DRUM MOTOR
M
CN3001
WF1
WF2
CAP.M_FG
CAP.M_F/R
CAP.M_VCTL
LM_F/R/S
DRUM_PG/FG
DRUM_CTL
68 C.FG_IN
62 CAP.M_F/R
33 CAP_CTL_V
61 LM_F/R/S
65 D.FG_IN
34 DRUM_CTL_V
PC3001 PHOTO SENSOR
PC3002 PHOTO SENSOR
1 SP_FG
2 TU_FG
ROTARY ENCODER
CN3002
LSA
LSB
LSC
LSD
91 LSA
92 LSB
93 LSC
94 LSD
12
A/C HEAD
A/C HEAD
CTL
CN1
CN2001
CTL HEAD(-)
CTL HEAD(+)
TP4001 CTL. P
WF3
WF4
76 CTL_AMP_OUT
75 CTL(-)
74 CTL(+)
TO VIDEO/N. AUDIO
S_DET
D.FF
V. PULSE
VIDEO_ENV
MESECAM_DET
SECAM(H)
30 S_DET
23 D.FF
24 V. PULSE
83 VIDEO_ENV
84 MESECAM_DET
TO VIDEO/N. AUDIO
V_TO_OSD
TO TERMINAL
V_FROM_OSD
50 SYNC_IN
49 V_TO_OSD
47 VIDEO_OSD_OUT
WF5
WF6
VIDEO SECTION (ON SCREEN)
80 PAL_PB(H)
28 H.REC_ST(H)
17 I2C_DATA
18 I2C_CLK
21 A.MUTE(H)
27 N.REC_ST(H)
15 N.REC(H)
A.MUTE(H)
PAL_PB(H)
H.REC_ST(H)
TO FMA
I2C_DATA_AV
I2C_CLK_AV
A.MUTE(H)
N.REC_ST(H)
N.REC(H)
TO VIDEO/N. AUDIO
12C_DATA2
12C_CLK2
TO TUNER
IC3003 (SERIAL MEMORY)
6 SCL
5 SDA
31 I2C_DATA2
32 I2C_CLK2
12C_DATA2
12C_CLK2
TO VPS/PDC_SLICER

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